SORGHUM BRAN, CHESTNUT WOOD POWDER, AND CHARDONNAY GRAPE SEED FLOUR ADDITION EFFECT ON LIPID OXIDATION AND COLOR IN GROUND BEEF PATTIES

A Thesis

by

TABITHA LYNN ROYBAL

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

December 2010

Major Subject: Food Science and Technology

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Chair of Committee,	Rhonda K. Miller
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ABSTRACT

Sorghum Bran, Chestnut Wood Powder, and Chardonnay Grape Seed Flour Addition Effect on Lipid Oxidation and Color in Ground Beef Patties. (December 2010)

Tabitha Lynn Roybal, B.A., Texas A&M University

Chair of Advisory Committee: Dr. Rhonda K. Miller

Natural, plant-based tannin antioxidants are capable of inhibiting lipid oxidation in ground beef and may be possible alternatives to industry synthetic and natural standards of BHA/BHT and rosemary extract, respectively.

Ground beef was purchased on three different days, each defining a batch during study 1. Treatments, added based on meat weight, included a control, 0.2% rosemary (RM), 0.02% BHA/BHT, 0.5% Chardonnay grape seed flour (CG), 0.1% and 0.25% chestnut wood flour (CN), and 0.25% and 0.5% of four sorghum bran varieties: black (BS), black with tannin (BTS), white (WS), and high tannin (TS). Patties, formed in duplicate, were randomly designated as cooked or raw and by 0 to 5 day storage, and were aerobically stored at 4°C. Cooked patties were analyzed using the TBARS method. Raw patties were analyzed for subjective and objective color, number of ingredient specks, and pH.

In study 2, six treatments were chosen for sensory evaluation including a control, 0.2% RM, 0.02% BHA/BHT, 0.5% CG, 0.1% CN, and 0.5% BTS. Preparation, and raw

and cooked analysis occurred similar to study 1. Additional patties were made for day 1 consumption by consumer panelists.

In study 1, all treatments except 0.25% WS reduced TBARS values over time compared to 0.2% RM. Four treatments (0.5% BTS, 0.5% CG, 0.25% CN, and 0.1% CN) showed no significant increase in TBARS values over storage. BS and BTS yielded the lowest color space values (CIE L*, a*, and b*; $P<0.0001$). Ingredient specks were possible color measurement influences.

In both studies antioxidant addition reduced TBARS values over time compared to the control ($P<0.0001$), and percent discoloration was highest in patties containing a sorghum treatment ($P<0.0001$).

Patties containing 0.1% CN were significantly favored in terms of overall like ($P<0.0002$) and flavor like ($P<0.0001$). Patties containing 0.2% RM were ranked lowest in overall and flavor like, and ground beef-like bite. Patties containing 0.5% CG were least liked according to tenderness level ($P<0.005$).

These results indicate that CG, CN, and certain varieties of sorghum bran can be added to pre-cooked ground beef products and provide better antioxidant protection than currently used ingredients of BHA/BHT and rosemary extract.

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father Mitchell Eugene Chandler, mother Donna Jean Sanchez, grandmother Julie Kay Cox, and my parents-in-law Tony and Joanette Roybal.

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NOMENCLATURE

BHA	Butylated hydroxyanisole
BHT	Butylated hydroxytoluene
BS	Black sorghum bran
BTS	Black sorghum bran with tannins
CG	ViniferOX^{TM} Chardonnay grape seed flour
CN	Chestnut wood powder
EDTA	Ethylene diaminetetra-acetic acid
MFD	Meat flavor deterioration
PG	Propyl gallate
RM	Herbalox® rosemary extract
TBARS	Thiobarbituric acid reactive substances
TS	High tannin sorghum bran
WOF	Warmed over flavor
WS	White sorghum bran

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INTRODUCTION

The meat industry strives to consistently produce high quality, shelf stable products that the increasingly-aware consumer will find satisfactory to purchase, prepare, and consume. One of the primary causes of meat deterioration and a foremost concern of the meat industry is lipid oxidation. Lipid oxidation in meats causes a loss in nutritional value, safety, and functionality, and a change in flavor (Frankel, 1984). With the desire to combat these changes, increase shelf-life, and maintain product quality, antioxidants are being studied and used in the meat industry to retard and control lipid oxidation.

In general, consumers favor a natural antioxidant as opposed to synthetic alternatives such as butylated hydroxyanisole (BHA), butylated hydroxytoluene (BHT), propyl gallate (PG), and tert-butylhydroquinone (TBHQ). There is growing concern regarding the inherent toxicity and possible carcinogenic effects of synthetic antioxidants in foods. Naturally-occurring inhibitors of oxidation generally come from plant sources; a few that have been commercialized include rosemary, sage, and tea extracts. The phenolic and polyphenolic compounds found in most plants are a natural and very active dietary antioxidant supply (Shahidi, 2000).

There have been numerous studies in recent years on different natural antioxidant sources. Of these studies, it has been hypothesized that the tannin component of

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This thesis follows the style of *Meat Science*.

polyflavans, found in abundance in many plant sources such as sorghum, could possibly inhibit lipid oxidation of the fat-soluble compounds in meat (Jenschke, 2004). Because of such hypotheses there is a demand for tannin research on their potential use as an antioxidant additive in meat applications. In this study naturally occurring tannin antioxidants found in sorghum bran varieties as well as Chardonnay grape seed and chestnut wood were hypothesized to inhibit lipid oxidation better than the industry synthetic and natural standards BHA/BHT and rosemary extract respectively.

LITERATURE REVIEW

Lipid Oxidation

Lipid oxidation is one of the primary causes of chemical spoilage and quality loss in meats and meat products. Discoloration, off-flavor, off-odor, loss of nutritional value, and deterioration of texture are all caused by lipid oxidation (Kanner, 1994; Morrissey, Sheehy, Kerry, & Buckley, 1998). The process of lipid oxidation produces a variety of toxic chemicals and animal cell stressors that include reduced oxygen derivatives known as free radicals, reactive oxygen species (ROS), and reactive nitrogen species (RNS). Examples include hydroxyl radical ($HO\cdot$), superoxide anion radical ($O_2^{-}\cdot$), peroxyl ($ROO\cdot$), alkoxyl ($RO\cdot$), hydrogen peroxide (H_2O_2), and hyperchlorous acid (HOCl) (Morrissey *et al.*, 1998). These compounds are responsible for oxidizing lipids, proteins, nucleic acids, and other macro-molecules leading to cell death and tissue damage (Kanner, 1994). Unless inhibited by a preventative antioxidant or mediated by an enzyme system, a free radical chain mechanism occurs. This lipid oxidation series of reactions involves three steps: initiation, propagation, and termination.

There must be a catalytic event that causes the initiation of the oxidative process; possible catalysts include metal ions, light, heat, free radicals, or pro-oxidants. The first steps in lipid oxidation are referred to as the initiation phase, and they begin with the reaction between oxygen and a fatty acid. A labile hydrogen is abstracted from a fatty acyl chain producing a free lipid radical, which reacts rapidly with oxygen to form peroxyradicals ($RO_2\cdot$), alkoxyradicals ($RO\cdot$), or alkylradicals ($R\cdot$). The free radicals

produced during the initiation step can then react with oxygen or remove hydrogen molecules from other hydrocarbons to form hydroperoxides and new free radicals. This perpetuates the chain reaction, which is now autocatalytic, and is referred to as the propagation phase of lipid oxidation. The reaction is terminated when the free radicals react with each other and their electrons come together in pairs yielding non-free radicals (Pearson, Love, & Shortland, 1977; Enser, 1987; Hamilton, Kalu, Prisk, Padley, & Pierce, 1997).

Lipid oxidation occurs in both triacylglycerols and phospholipids; the degree of unsaturation influences the oxidative stability. In general, the more double bonds in a fatty acid, the more susceptible it is to lipid oxidation. Therefore the softer fats, or the polyunsaturated fatty acids (PUFA), are more easily oxidized than monounsaturated fatty acids, which are in turn more easily oxidized than saturated fatty acids. The configuration of the double bonds also plays a role in fatty acid stability; *cis* double bonds oxidize faster than their *trans* double bonds (Morrissey *et al.,* 1998). Comminuted meats are more susceptible to lipid oxidation and the resulting effects because processing meat disrupts the tissue and exposes phospholipids to oxygen and other catalysts of lipid oxidation (Pearson *et al.,* 1977). Therefore, processed meats are especially susceptible to rancidity and other effects of lipid oxidation. Understanding and controlling lipid oxidation continues to be a concern for food scientists especially in the study of quality enhancement of processed meat products.

The bright cherry-red color of freshly ground meat in the oxymyoglobin state diminishes into a red-brown metmyoglobin state as the meat oxidizes. Oxymyoglobin is

the main pigment in beef. As it loses oxygen and an electron from iron in its ferrous state, it is converted to metmyoglobin. This oxidation process causes a color shift from bright red to dark red, and then to brown (Giddings, 1977; Kanner, 1994). The majority of consumers consider color to be of utmost importance when purchasing meat products (Giddings, 1977). If this switch from the preferred oxymyoglobin to the undesirable metmyoglobin state could be prolonged by retarding the oxidation process, profit would increase as more product would be sold before being removed from the retail case.

Antioxidant Effect on Lipid Oxidation

Antioxidants offer a protective mechanism that limits or inhibits exposure of free radicals and reactive oxygen species. Synthetic antioxidants such as butylated hydroxytoluene (BHT) and butylated hydroxyanisole (BHA), both of which are generally recognized as safe (GRAS) for use as chemical preservatives in foods when the total content is not over 0.02% of fat content, are common food preservatives. Natural antioxidants are the new wave of prevention and inhibition of oxidation in meat products; they are gaining scientific interest because of the safety and toxicity problems of synthetic antioxidants (Amarowicz, Naczk, & Shahidi, 2000; Shahidi, 2000). Rosemary is currently used in the meat industry as the go-to natural antioxidant; rosemary has GRAS status as a natural seasoning and flavoring oil extract. Most natural antioxidants are *ortho*-disubstituted phenolic compounds while synthetic antioxidants are mostly *para*-disubstituted phenolic compounds. These antioxidant compounds have low activation energy which allows them to readily donate a hydrogen molecule to free radicals. The antioxidant that results after the donation of hydrogen is a free radical that

is stabilized by the delocalization of the radical electron and therefore not subject to oxidation or initiation of other free radicals. The free radical antioxidants can react with other free radicals to form stable compounds, which in turn terminates the propagation phase of lipid oxidation. There are several different categories of antioxidants that inhibit lipid oxidation which include inhibitors of free radicals (known as preventative antioxidants), inhibitors interrupting the propagation of the autoxidation chain reaction (known as chain-breaking antioxidants or scavengers), singlet oxygen quenchers, synergists of proper antioxidants, reducing agents, metal chelators, and inhibitors of pro-oxidant enzymes (Pokorny, 2007).

Polyphenols exhibit antioxidant properties by inhibiting lipid peroxidation and low density lipoprotein oxidation, and by scavenging oxygen radicals (Sanchez-Moreno, Jimenez-Escrig, & Sauro-Calixto, 2000). There is a direct relationship between total amount of phenolic compounds and antioxidant capacity of plants (Robards, Prenzler, Tucker, Swatsitang, & Glover, 1999). Many tannins are used as food additives to prevent lipid oxidation including tannic acid, ellagic acid, gallic acid, and methyl gallate (Chung, Wong, Wei, & Huang, 1998).

Tannins as Antioxidants

Tannins are natural phenolic antioxidants (Hagerman, Riedl, Jones, Sovik, Ritchard, Hartzfeld, & Riechel, 1998) and are present in a wide variety of foods including cereals, herbs, fruits, vegetables, oilseeds, legumes, spices, cocoa products, and different beverages (Boskou, 2006; Pokorny, 2007). Tannins are also found in a large variety of herbaceous and woody higher plant species (Scalbert, 1991). They exist

in grains like sorghum, millet, barley, dry beans, faba beans, peas, carobs, pigeon peas, and winged beans. They are also present in fruits such as citrus fruits, apples, bananas, blackberries, cranberries, dates, grapes, hawthorn berries, peaches, pears, persimmons, plums, raspberries, and strawberries. Other rich sources of tannins include different tea and wine beverages and forages such as crown vetch, lespedeza, lotus, sainfoin, and trefoil (Chung *et al.,* 1998).

The term "tannin" comes from the plant extracts' use as a tanning treatment of animal hides to make leather (Chung *et al.,* 1998). Tannins differ from other natural phenolic compounds in their ability to precipitate alkaloids, gelatin, and other proteins (Fennema, Damodaran & Parkin, 2008). They are classified as either phlorotannins, hydrolysable, or condensed (Hagerman *et al.,* 1998). Phlorotannins are not widely consumed as they are found in marine brown algae (Ragan & Glombitza, 1986; Hagerman *et al.,* 1998). Hydrolysable tannins contain a carbohydrate (usually glucose), and the hydroxyl groups of the carbohydrate are esterified with phenolic groups like gallic acid; hydrolysis is easily achieved with a weak acid or base. Condensed tannins are more structurally complex flavonoid oligomers and are not susceptible to cleavage by hydrolysis (Hagerman *et al.,* 1998; Bors, Foo, Hertkorn, Michel, & Stettmaier, 2001). Condensed tannins are lipophilic, have high molecular weight, and contain many phenolic hydroxyl groups (Bors *et al.,* 2001). Research indicates that compared to simple phenols, tannins posses higher antioxidant activities and are 15-30 times more powerful at quenching peroxy radicals (Hagerman *et al.,* 1998). Other studies have found condensed tannins to have the following effects: inhibition of lipid peroxidation

(Packer, 1993); scavenging of oxygen radicals (Husain, Cillard, & Cillard, 1987; Chimi, Cillard, Cillard, & Rahamani, 1991); and binding and inactivation of pro-oxidative metal ions such as iron and copper (Carbonaro, Virgili, & Carnovale, 1996; Hemphill, 2006).

Meat Sensory and the Influence of Lipid Oxidation

Flavor is a key quality characteristic of muscle foods. Both intrinsic and extrinsic factors cause variability in meat flavor. Flavor factors are of primary concern in food science because of the consumer influence they possess. Meat flavor deterioration (MFD) is a sensory obstacle that food scientists strive to overcome. MFD is the decrease in desirable flavor attributes accompanied by increasing off-flavors (Spanier, St Angelo, & Shaffer, 1992). Warmed-over-flavor (WOF) in meat products, first recognized by Tims and Watts (1958), is produced by lipid oxidation causing formation of hydroperoxides, which in turn decompose to various volatile compounds. These volatile compounds include carbonyl compounds, hydrocarbons, furans, hexanes, and others that are the primary cause of rancid off-flavors and off-odors (Kanner, 1994; Jayathilakan, Sharma, Radhakrishna, & Bawa, 2007). The development of these off-flavor volatile compounds that cause WOF can be analyzed by gas chromatography-olfactory (GC-O) (Dupuy, Bailey, St. Angelo, Vercellotti, & Legendre, 1987).

Oxidation not only causes deterioration in flavor but color as well. Consumers associate the bright, cherry red color of fresh meats with freshness and quality; this desirable color is a result of the oxymyoglobin state of meat myoglobin. Oxymyoglobin is converted to the reddish-brown, less desirable, metmyoglobin state as it loses oxygen and ferrous iron loses an electron, changing the light absorption properties (Kanner,

1994). Inhibition of the oxidation of lipids is essential to the meat industry if for no other reason than to maintain optimal flavor and color perception.

There is hesitation associated with adding tannin containing ingredients to meat products based on the known sensory attributes of tannins. Many different food functionalities, such as color and astringency, are attributed to polyphenolics. Tannins range in color from yellowish-white to light brown and have an astringent mouth feel and bitter taste, much like the sensation caused by the consumption of red wine, which has a high tannin concentration. The astringent characteristic of tannins is what causes dryness and puckering of the mouth that results when proteins in the saliva interact with the polyphenols and form aggregates (Fennema *et al.,* 2008). Such sensory characteristics would likely be unwelcome among meat eaters, but possibly avoided with specific tannin additives at proper concentrations.

Grape Seed

Fruits are known and valued for their antioxidant properties, which are attributed to the phenolic compounds they contain (Soong & Barlow, 2004; Silva, Souza, Rogez, Rees, & Larondelle, 2007). It has been reported that phenolic compound concentration and antioxidant capacity is usually higher in fruit peels and seeds rather than their pulps (Wang, Li, Yang, Shao, He, Wang, & Sun, 2007). Grape seeds are byproducts of various manufacturing processes in the food industry including that of jams, jelly, juice, and wine, and thus treated as waste (Parry Jr., 2006). The primary polyphenols in grape seeds are flavonoids, including the monomeric flavan-3-ols catechin, epicatechin, gallocatechin, epigallocatechin and epicatechin 3-O-gallate, and procyanidin dimers,

trimers, and more highly polymerized procyanidins (Fuleki & Ricardo-da-Silva, 1997). Developing natural food preservatives from this otherwise discarded seed flour could benefit both the consumer, by increasing food product acceptability, and the grape industry by increasing sales (Luther, 2006). Luther (2006) showed that Chardonnay grape seed flour in particular inhibits lipid oxidation in fish oil and that it is has potential to be developed into a natural antioxidant preservative. Grape seed extract was shown to significantly reduce TBARS values in ground dark turkey meat compared to the control at both 1.0 and 2.0% whether the patties were heated or unheated and in the presence or absence of salt (Lau & King, 2003). Carpenter, O'Grady, O'Callaghan, O'Brien, and Kerry (2007) found that grape seed extract decreased lipid oxidation in raw pork patties on days 9 and 12 compared to the controls. They also found that lipid oxidation decreased in cooked pork patties and antioxidant potency increased with increasing grape seed extract concentration thus demonstrating the antioxidants' thermal stability. A study conducted by Ahn, Grün, and Fernando (2002) concluded that grape seed extract significantly improves cooked ground beef oxidative stability as well as retards the formation of hexanal and WOF scores. Similar oxidation inhibition results have been found with grape antioxidant dietary fiber in chicken hamburger (Sáyago-Ayerdi, Brenes, & Goñi, 2009). According to the FDA, grape seed extract has GRAS status for use as an antioxidant or emulsifier in beverages, breakfast cereals, fats and oils, frozen dairy deserts, milk products, grain products, and processed fruits and fruit juices as levels ranging from 0.01 to 0.08%.

Chestnut Wood

Tree woods and barks are an abundant source of polyphenolic compounds, which help ward off predators and pathogens (Bianco, Handaji, & Savolainen, 1999; Lampire,

Mila, Raminosoa, Herve du Phenoat, Faucheur, & Laprevote, 1998). Ellagic acid is one such polyphenolic compound found in both chestnut bark (Mendes de Vasconcelos, Do, Bennet, Rosa, & Cardoso, 2007) and chestnut wood (Bianco *et al.,* 1999). Ellagic acid is used in the food industry to inhibit lipid oxidation in food products via its antioxidant activity (Vekiari, Gordon, Garcia-Macias, & Labrinea, 2007). A dimeric derivative of gallic acid, ellagic acid is usually found combined with its precursor, hexahydroxydiphenic acid, or bound in the form of ellagitannins (Amakura, Okada, Tsuji, & Tonogai, 2000).

In a study of the antioxidant activity and phenolic content of aged brandies Canas, Casanova, and Balchior (2008) found that brandies aged in chestnut wood barrels as opposed to Limousin oak barrels had higher antioxidant activity (two-fold) and total pholyphenolic count (15-fold).

Sorghum Bran

Sorghum is one of the top five cereal crops in the world (Rooney & Waniska, 2000). All sorghum contains phenolic compounds but the concentrations of such compounds depend on the genotype and growth environment of the cultivar; these influences also affect bran color, appearance, and nutritional value (Hahn, Rooney, & Earp, 1984). The polyphenols in many plants, including sorghum, provide a defense mechanism against disease and insects (Hahn *et al.,* 1984). The phenolic compounds, found in the outer layers of the sorghum kernel, also provide the antioxidant activity of interest in the food industry (Awika, Rooney, Wu, Prior, & Cisneros-Zevallos, 2003; Awika, 2003). Tannins, mostly condensed, and anthocyanins are two phenolic

compounds associated with sorghum in particular that are responsible for the antioxidant capability (Awika, 2003). It is possible that water-soluble anthocyanins and fat-soluble tannins work synergistically to inhibit autoxidation in both phases of food systems (Awika, 2003; Jenschke, 2004).

Anthocyanins are natural flavanoid colorants with strong antioxidant capability, which has been reported in many studies (Satue-Gracia *et al.,* 1997; Wang *et al.,* 1997; Lapidot *et al.,* 1999; Saint-Cricq de Gaulejac *et al.,* 1999; Awika 2000, 2003). Anthocyanins are glycoside and acylgycoside derivatives of anthocyanidins (Wang *et al.*, 1997). Many anthocyanidins have been identified in different types of sorghum. Red and white sorghum has been found to contain apigeninidin, apigeninidin-5-glucoside, luteolinidin, and luteolinidin-5-glucoside (Nip & Burns, 1969; Nip & Burns 1971). Black sorghum contains more anthocyanin pigments than other sorghums (Awika, 2000) with luteolinidin and apigeninidin as the major components (Gous, 1989). Luteolinidin and apigeninidin make up the 3-deoxycyanidins, and they have a few characteristics that set them apart from other anthocyanidins. The 3-deoxycyanidins are not very abundant in nature (Clifford, 2000), but they are the most common in sorghum (Gous, 1989; Sweeney & Iacobucci, 1981). As their name suggests, the 3-deoxycyanidins are without oxygen at the C-3 position of their structure. Sweeney and Iacobucci (1981) found that unlike anthocyanidins from fruit and vegetable sources, the 3-deoxycyanidins were very stable in low pH conditions. Their stability may be due to the structural absence of the C-3 hydroxyl group.

Tannin containing sorghum bran has been shown to be an effective antioxidant additive to both raw (Jenschke, 2004; Hemphill, 2006) and cooked (Shin, 2006) ground beef systems. The antioxidant properties of sorghum are comparable to those of many fruits (Awika, 2000). However, sorghum may be a more preferable and less expensive phenol source because of the cereals' storage stability and high grain source (Awika, 2003).

MATERIALS AND METHODS

Study 1. Color and TBARS Values

Sample Preparation

Ground beef containing 81% lean was purchased at a local retail meat market (Ruffino's, Bryan, TX) on three separate processing days each defining a batch. The appropriate treatment ingredient was added to pre-weighed amounts of raw ground beef according to meat weight. Treatments included a no ingredient added control, 0.2% rosemary extract (RM, Herbalox® Type HT-25, Kalsec Inc., Kalamazoo, MI), 0.01% of each food-grade butylated hydroxyanisole (BHA, Sigma-Aldrich, W218208) and butylated hydroxytoluene (BHT, Sigma-Aldrich, W218405), 0.5% ViniferOX™ Chardonnay grape seed flour (CG, Botanic Oil Innovations Inc., Spooner, WI), 0.1% and 0.25% chestnut wood powder (CN, *Castanea sative* mill, approximately 74-78% hydrolysable tannins, Chemtan® Chestnut Powder KPN, Chemtan Co., Exeter, NH), and 0.25% and 0.5% of each of the following sorghum bran varieties: black sorghum bran (BS; TX 430), black sorghum bran with tannins (BTS; equivalent mixture of B.05020, B.05029, and B.05023), high tannin containing sorghum bran (TS; sumac), and white sorghum bran (WS; 73% BTX 631, 25% RTX 436). Treatment amounts were based on data from previous studies (Cruzen, 2010; Hemphill, 2006; Jenschke, 2004; Shin, 2006). CG and CN were received pre-milled in powder form. Sorghum varieties were grown in College Station, TX and decorticated using a PRL dehuller (Nutama Machine Co., Saskatoon, Canada). Bran particle size was reduced using a pin mill to pass through a 50

mesh sieve. BS, BTS, TS, and WS bran yield was 9.9%, 14.1%, 9.8%, and 9.1% respectively.

The ground beef and added ingredient were mixed together for 1.5 min in a Hobart mixer (A-200 T, Troy, OH). Ground beef used for control patties was mixed for 1.5 min. The mixture was portioned off in 200g amounts, and 14 patties per treatment were hand formed using a standard patty mold (Tupperware™ Hamburger Press). Patties were randomly designated as cooked or raw and by storage time (0, 1, 3, 5 d). Two raw patties per treatment per storage length were coded with random three digit numbers. Two patties per treatment per storage length were cooked in a 180°C Hobart convection oven (Model No. DN09, Troy, OH) to an internal temperature of 68°C. Internal temperature was monitored by threading an iron thermocouple (Omega Engineering, Stamford, CT) through each patty to the geometric center, and temperature was displayed using an Omega HH501BT Type T thermometer (Omega Engineering, Inc., Stamford, CT). Eight patties per treatment were cooked on one pan. Initial time, initial internal temperature, final time, and final internal temperature were recorded for each patty. All patties were placed on individually labeled Styrofoam trays (Pactive Advanced Packaging Solutions, Lake Forest, IL) and over-wrapped (Heat Sealing Equip. Co., Cleveland, OH) with Polyvinyl Chloride (PVC) film (Stretchable Meat Film 55003815, Prime Source, St Louis, MO). Packages were randomly assigned locations in a 4°C cooler under 1600 lx fluorescent lighting (Lithonia Lighting, Aculty Lighting Group, Inc., Conyers, GA, 1614 lux), simulating a retail meat case. The patties remained under these conditions, which

are known to stimulate lipid oxidation in control samples, throughout the duration of the assigned storage period.

At the appropriate length of storage each raw patty was analyzed, while still packaged, for number of ingredient specks by counting visible specks in random 2.54 cm^2 gridded squares, subjective color score values using trained panelists, objective Minolta color score values, and pH. The cooked patties were individually homogenized using a food processor and chemically analyzed for amount of lipid oxidation via a modified TBARS method. For consistency purposes, analysis occurred at a standard time each evaluation day.

Raw Patty Analysis

The Minolta (Minolta Chroma Meter CR-400, Minolta Co. Ltd., Ramsey, NJ) was calibrated daily using a white tile (Y = 94.3, x = 0.3130, y = 0.3199) and the same PVC over wrap used for patty packaging. Each reading consisted of CIE L*, a*, and b* (lightness, redness, and yellowness, respectively) color space values. Three readings were randomly taken from the packaged patty surface and values were averaged to give a representative score. Subjective color was measured by three pre-trained descriptive attribute color sensory panelists as defined by AMSA (1991, 1995). Panelists became familiar with the eight-point lean color scale (1=very dark red; 8=light grayish-red or pale-pink), surface discoloration scale (0-100% discoloration), and brown discoloration scale (1=very light brown, tan; 5=very dark brown) during training. Visual standards were provided for training and reference purposes. Color codes for each scale may be

found in Appendix E. Visible ingredient specks were counted in random 2.54 cm^2 areas using a gridded 7.62 cm^2 clear Plexiglas template that was placed over the patty surface.

Three internal pH readings were taken from random locations in the raw ground beef patty using a pH meter (Model IQ 150, IQ Scientific Instruments, Carlsbad, CA) after color evaluations were made. The three measurements were averaged to determine the representative pH value of each patty. Standard buffers of 4.0 and 7.0 were used to calibrate the pH meter at the beginning of each day.

Cooked Patty Analysis

Cook yield was expressed as a percentage of ground beef patty weight by recording the weight of each patty before and after cooking.

Cook yield % = (weight of cooked patty/weight of raw patty) x 100

Cooked patty samples were homogenized using a food processor (CuisineArt Pro Classic, Model DLC-10S TX Type 25, CuisineArt, East Windsor, NJ) and analyzed for thiobarbituric acid reactive substances (TBARS) as a measurement of lipid oxidation within treatment samples. Using TBARS procedures described by Tarladgis *et al.* (1960) and modified by Rhee, K. S. (1978), the amount of mg malonaldehyde/ 1000 g sample was determined. Two 30 g amounts were taken from each treatment sample and blended (Waring™ commercial blender, New Hartford, CT) with 45 ml of 50°C double distilled deionized water (ddH_2O), 15 ml of a 0.5% solution of propyl gallate (PG) and ethylene diaminetetra-acetic acid (EDTA) for two minutes using a commercial blender. In a 500 ml Kjeldahl flask, 30 g of the meat slurry, 77.5 ml of 50°C ddH_2O, five to six boiling chips, and 2.5 ml of 4N HCl were combined. The inside neck of each Kjeldahl

flask was coated with a 316 Silicone Release Spray (Molykote® 316 Silicone Release Fluid, DOW Corning Corp., Midland, MI) to reduce foaming. Flasks distilled until 50 ml of the distillate was collected. After mixing the distillate, 5 ml were transferred to a test tube along with 5 ml of a 0.2 M TBA solution. Lids were placed on the tubes and the contents mixed before immersing into a boiling water bath for 35 min. A blank reference test tube was prepared containing distilled water and the TBA reagent. Test tubes cooled in tap water for 10 min and a pipette portion was transferred to a cuvette (VWR Cuvettes PMMA Semi-Micro, VWR, West Chester, PA). Optical density of the sample was measured against the blank at a wavelength of 530 nm using a spectrophotometer (Cary 300 Bio UV-Visible Spectrophotometer, Varian Instruments, Walnut Creek, CA). TBARS values, expressed as mg malonaldehyde/kg ground beef, were calculated using the following conversion factor:

mg malonaldehyde/kg sample = absorbance x 7.8

Study 2. Consumer Sensory Study

Sample Preparation

Ground beef containing 81% lean was purchased at a local retail meat market (Ruffino's, Bryan, TX) on three separate processing days each defining a batch. Six treatments were selected to be studied in a consumer sensory study based on results from study 1. Selected treatments included a no ingredient added control, 0.2% rosemary extract (RM, Herbalox® Type HT-25, Kalsec Inc., Kalamazoo, MI), 0.01% of each food-grade butylated hydroxyanisole (BHA, Sigma-Aldrich, W218208) and butylated hydroxytoluene (BHT, Sigma-Aldrich, W218405), 0.5% ViniferOX™ Chardonnay

grape seed (CG, Botanic Oil Innovations Inc., Spooner, WI), 0.1% chestnut (CN, *Castanea sative* mill, approximately 74-78% hydrolysable tannins, Chemtan® Chestnut Powder KPN, Chemtan Co., Exeter, NH), and 0.5% black sorghum bran with tannins (BTS). Patties were prepared and analyzed as they were in study 1 with the addition of a consumer sensory study.

Patties to be used for sensory analysis were cooked as described for study 1. All patties were placed on individually labeled Styrofoam trays (Pactive Advanced Packaging Solutions, Lake Forest, IL), vacuum packaged, and stored at 4°C for next day consumption.

Consumer Analysis

A random volunteer consumer panel composed primarily of students (a total of 94) from all areas of study at Texas A&M University was utilized. Evaluation was conducted in individual booths (located away from the sample preparation area), under white lighting for consumer evaluation of sample color and appearance. Three testing days occurred at the beginning of three consecutive weeks and were divided into four sessions each. A target of 30 different consumers per testing day was set. At the beginning of each of the four sessions within a testing day the moderator conveyed the purpose of the study, panelist expectations, and analysis instructions. Preprinted and randomly coded ballots were given to each panelist and included directions to follow during the analysis, a demographic information questionnaire, questions with a nine-point answer scale, and open ended questions inviting additional comments from panelists. Questions with a nine-point answer scale included hedonic questions such as overall like/dislike, flavor like/dislike, tenderness like/dislike (1=dislike extremely, 9=like extremely); other nine-point answer scale questions included intensity of flavor (1=none or extremely bland, 9=extremely intense), level of tenderness

(1=extremely tough, 9=extremely tender), ground beef-like bite (1=extremely atypical, 9=extremely typical), and level of juiciness (1=extremely dry, 9=extremely juicy). Each consumer panelist was provided with room temperature ddH_2O, unsalted saltine crackers, expectorant cups, napkins, toothpicks, and a pencil. Consumer panelists were asked to cleanse their palate before the first sample and between subsequent samples by taking a bite of an unsalted saltine cracker and a drink of ddH_2O. Panelists were served the reheated and portioned patties in a pre-randomized order, and each sample was assigned a three-digit random number.

Reheating Procedure

One patty was capable of serving three consumer panelists; pre-randomization accounted for this by grouping serving order by three. Order of service was randomized across consumers. Patties were removed from vacuum packaging, placed on the center of a Corelle break and chip resistant plate, covered with a paper towel, and placed in the center of a household sensor microwave oven (General Electric Co., Louisville, KY, Model No. JES 1351WB 003). Microwave power was set to 70%. The patties were heated for 30 s, flipped over with paper towel remaining atop the patty, and heated for an additional 30 s. Patties were promptly removed from the microwave, placed on cutting boards, and divided into six even pie-shaped pieces. Two pieces made up one sample. Samples were served in 6 oz glass custard cups. Service of the following sample occurred one minute after the last of the three consumer panelists raised the booth hood, which indicated they were finished with the previous sample.

Reheating plates and serving custard cups were washed in between sessions in a three sink set up. All servers wore frequently changed gloves and hair nets.

Statistical Analysis

Data was analyzed by Analysis of Variance using the Proc Mixed procedure of SAS (Version 9.2, Cary, N.C.) using an $\alpha < 0.05$. Main effects included batch, treatment, storage day, and their two-way interactions. Two-way interactions that were not significant ($P < 0.05$) were pooled into the error term and the final model was run. Least squares means were calculated for all main effects and significant ($P<0.05$) interactions were reported in the Analysis of Variance table, differences between least squares means were determined using the pdiff function of SAS.

RESULTS AND DISCUSSION

Study 1. Color and TBARS Values

TBARS Values

The TBARS procedure is a distillation method for quantitative determination of malonaldehyde, which is a three-carbon fragment product of the lipid oxidation process (Tarladgis *et al.,* 1960). Treatment and storage length effects on lipid oxidation in pre-cooked ground beef patties were analyzed using the TBARS method and by comparing TBARS values, measured in mg malonaldehyde/kg meat sample. TBARS values were significantly affected by treatment ($P<0.0001$), storage day ($P<0.0001$), and their two way interaction ($P<0.0001$, Table 1, Figure 1). Patties containing an antioxidant treatment had lower TBARS values than the control. This finding is complimentary to those of Shin (2006) and Cruzen (2010); all three studies stored patty samples under conditions known to promote lipid oxidation: pre-cooking, aerobic packaging, fluorescent lighting, and varying lengths of storage. Control patty TBARS values, followed closely in trend by 0.25% WS, began by having the highest TBARS values on day 0 and kept a steep and steady oxidative increase as storage continued and the lipid oxidation free radical chain reaction proceeded. All treated patties, with the exception of 0.25% WS as previously mentioned, and 0.5% WS on day 1, yielded lower TBARS values than RM across all 5 days of storage. This indicated that most of the treatments used in this study were more powerful antioxidants than the industry natural antioxidant

Table 1. Study 1 treatment and 4°C storage day effects least squares means for cooked TBARS values, raw pH, cook yield, and raw external color attributes.

Effect	TBARS	pH	Cook Yield %	CIE Color Space Values L*	a*	b*
RMSE[b]	0.614	0.068	4.121	1.237	1.174	0.847
Treatment[a]	<0.0001	0.66	0.01	<0.0001	<0.0001	<0.0001
Control	3.66^{j}	5.72	70.82^{def}	54.74^{h}	18.52^{i}	12.51^{h}
0.02% BHA/BHT	1.22^{ef}	5.76	71.32^{def}	54.53^{gh}	18.30^{i}	12.16^{gh}
0.20% Rosemary Extract	2.26^{h}	5.76	69.12^{cd}	55.12^{h}	18.86^{i}	12.75^{i}
0.5% Chardonnay Grapeseed	0.58^{c}	5.75	69.08^{cd}	54.49^{gh}	17.62^{h}	11.70^{fg}
0.1% Chestnut	0.56^{c}	5.73	68.22^{c}	53.42^{fg}	17.53^{h}	11.77^{fg}
0.25% Chestnut	0.55^{c}	5.73	70.19^{cde}	53.24^{fg}	16.61^{g}	11.67^{f}
0.25% Black Sorghum	1.62^{g}	5.75	70.16^{cde}	52.31^{e}	14.91^{d}	10.60^{d}
0.5% Black Sorghum	1.02^{de}	5.74	71.49^{ef}	50.31^{c}	13.14^{c}	9.34^{c}
0.25% Black Tannin Sorghum	1.51^{fg}	5.75	72.89^{f}	53.03^{f}	15.78^{ef}	11.16^{e}
0.5% Black Tannin Sorghum	0.85^{cd}	5.75	70.86^{def}	51.39^{d}	13.80^{cd}	9.82^{c}
0.25% Tannin Sorghum	1.66^{g}	5.73	72.11^{ef}	53.73^{fg}	16.21^{fg}	11.68^{f}
0.5% Tannin Sorghum	0.99^{de}	5.75	70.80^{def}	53.83^{g}	15.32^{de}	11.52^{ef}
0.25% White Sorghum	2.96^{i}	5.75	69.92^{cde}	55.02^{h}	16.70^{g}	12.40^{h}
0.5% White Sorghum	1.97^{h}	5.76	70.92^{def}	54.77^{h}	16.08^{fg}	12.33^{h}
Storage Day[a]	<0.0001	<0.0001	0.14	<0.0001	<0.0001	<0.0001
0	0.66^{c}	5.74^{d}	69.71	54.72^{e}	22.08^{f}	13.14^{f}
1	1.15^{d}	5.80^{e}	70.58	53.71^{d}	18.77^{e}	11.97^{e}
3	1.96^{e}	5.82^{f}	70.83	53.37^{d}	14.24^{d}	10.18^{c}
5	2.35^{f}	5.60^{c}	71.13	52.45^{c}	10.46^{c}	10.83^{d}

[a]*P*-value from analysis of variance tables for each main effect.
[b]RMSE = Root mean square error from Analysis of Variance tables.
[cdefgh]Mean values within a column and main effect followed by the same letter are not significantly different ($P > 0.05$).

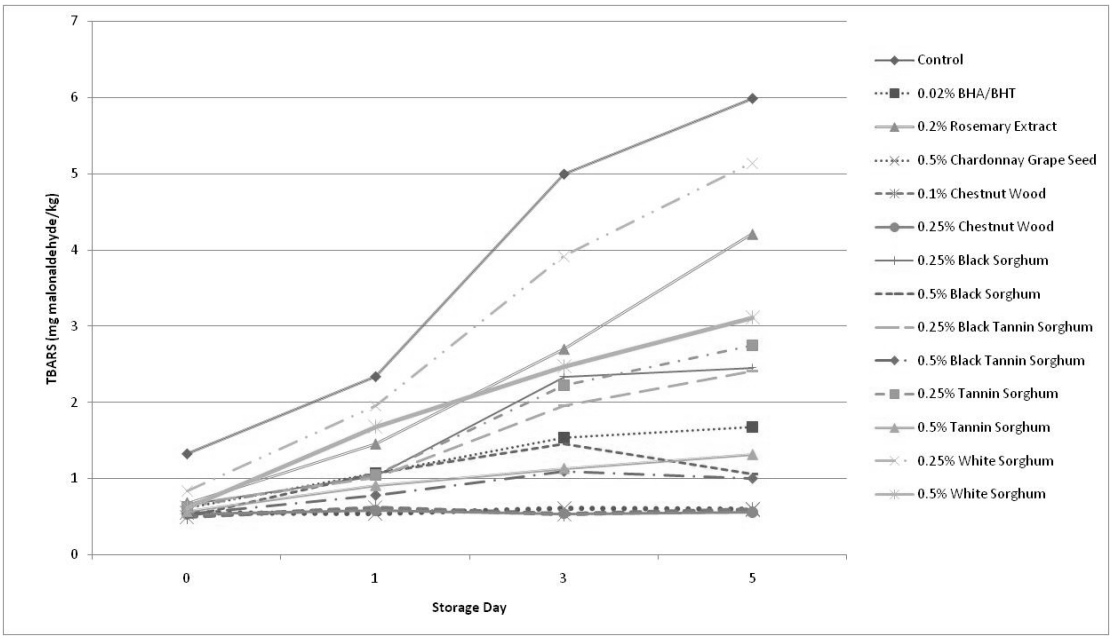


Figure 1 - Study 1 least squares means for treatment by storage day interaction for TBARS values (mg malonaldehyde/kg) of pre-cooked ground beef patties.

P-value = <0.0001 from Analysis of Variance Table
Root Mean Square Error = 0.614

leader and that the majority of the treatments were more effective at interfering with the lipid oxidation process by way of antioxidant mechanisms. WS was selected as a sorghum bran control treatment. WS had a very low tannin content (0.20 mg CE/g) and total phenol content (5.53 mg GAE/g, Table 2), and was not expected to have much lipid oxidation inhibition effect. While TBARS values for 0.5% WS (day 1, 3, and 5), 0.25% BS, 0.25% TS, and 0.25% BTS ranked between those of RM and BHA/BHT, there were six treatments that reduced TBARS values more than BHA/BHT and they were 0.5% BS, 0.5% TS, 0.5% BTS, 0.5% CG, 0.25% CN, and 0.1% CN. There was no significant difference in TBARS values between the four most effective treatments in this study (0.5% BTS, 0.5% CG, 0.25% CN, and 0.1% CN). In fact, 0.5% CG, 0.25% CN, and 0.1% CN treated patties did not experience any increase in lipid oxidation over the 5 days of storage. These exceptionally effective antioxidants likely interfere with the lipid oxidation process in a variety of ways. It is possible they fall into more than one antioxidant category (inhibitors, scavengers, metal chelators, singlet oxygen quenchers, reducing agents, inhibitors of pro-oxidant enzymes), and therefore have multiple approaches to inhibition (Pokorny, 2007). TBARS results lead one to question how lower levels of these ingredients would behave under similar experimental conditions. Cruzen (2010) reported on a similar study that used both 0.25% and 0.5% CG in pre-cooked ground beef patties and her results indicated that there was a significant increase in TBARS values (nearly double) when the amount of Chardonnay grape seed flour was halved. Further research is required to determine if CG could be added at an amount between 0.25 and 0.5% and still achieve complete lipid oxidation inhibition as obtained

Table 2. Study 1 total phenols, TEAC, and tannin measurements for sorghum bran variaties.

Sample	Total Phenols (mg GAE/g)		TEAC[a] (umol TE/g)		Tannins (mg CE/g)	
	Avg.	S.D.	Avg.	S.D.	Avg.	S.D.
White Sorghum Bran	5.53	0.09	56.35	0.90	0.20	0.17
Black Sorghum Bran	35.42	0.42	504.07	1.46	7.79	2.39
Black Tannin Sorghum Bran	79.67	0.94	1052.64	8.33	121.49	3.78
Tannin Sorghum Bran	74.75	1.12	967.70	21.14	128.71	1.38

[a]TEAC = Trolox equivalent antioxidant capacity assay, also referred to as the ABTS method.

with 0.5%. Cruzen (2010) also worked with a chestnut wood powder treatment added at 0.25 and 0.5%. The results showed no significant difference ($P<0.0001$) between the two treatment amounts. Since the study at hand uncovered similar results with even lower levels (0.1%) of the same tannin source (CN), more research should be conducted to determine the lowest level of CN necessary to maintain such low levels of lipid oxidation.

The total phenol content, tannin content, and trolox equivalent antioxidant capacity (TEAC) were each measured for all four varieties of sorghum bran used in this study (Table 2). BTS had the highest total phenol content (79.67 mg GAE/g) and the highest TEAC value (1052.64 umol TE/g) of all the sorghum bran varieties. BTS was a close second in total tannin content following TS (121.49 to 128.71 mg CE/g, respectively). The consistently high antioxidant values for BTS in all three measurements cause this sorghum bran treatment to be significantly better at inhibiting lipid oxidation than the other sorghum bran treatments. It is likely that the CG and CN treatments had similar, or higher, antioxidant values supported by the TBARS results.

The three meat batches, purchased and prepared at three separate times over the course of this study played a significant role in TBARS values ($P<0.0001$). Batch 3 was significantly higher in terms of TBARS values than batches 1 and 2 (Table 3). Batch by treatment interactions showed this general trend; the exceptions were 0.5% CG, 0.25% CN and 0.1% CN (Figure 2). Batch interactions were expected due to the heterogeneous nature of comminuted beef and raw material variation introduced by purchasing retail meat on three separate occasions over the course of three weeks.

Table 3. Study 1 batch effect least squares means for cooked TBARS values, raw pH, cook yield, and raw external color attributes.

Effect	TBARS	pH	Cook Yield %	CIE Color Space Values L*	a*	b*
RMSE[b]	0.614	0.068	4.121	1.237	1.174	0.847
Batch[a]	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001
1	1.29[c]	5.78[e]	71.72[e]	50.17[c]	16.58[d]	11.37[c]
2	1.45[c]	5.71[c]	70.56[d]	55.63[e]	15.83[c]	11.26[c]
3	1.86[d]	5.74[d]	69.40[c]	54.90[d]	16.75[d]	11.96[d]

[a]*P*-value from analysis of variance tables for each main effect.
[b]RMSE = Root mean square error from Analysis of Variance tables.
[cd]Mean values within a column and main effect followed by the same letter are not significantly different ($P > 0.05$).

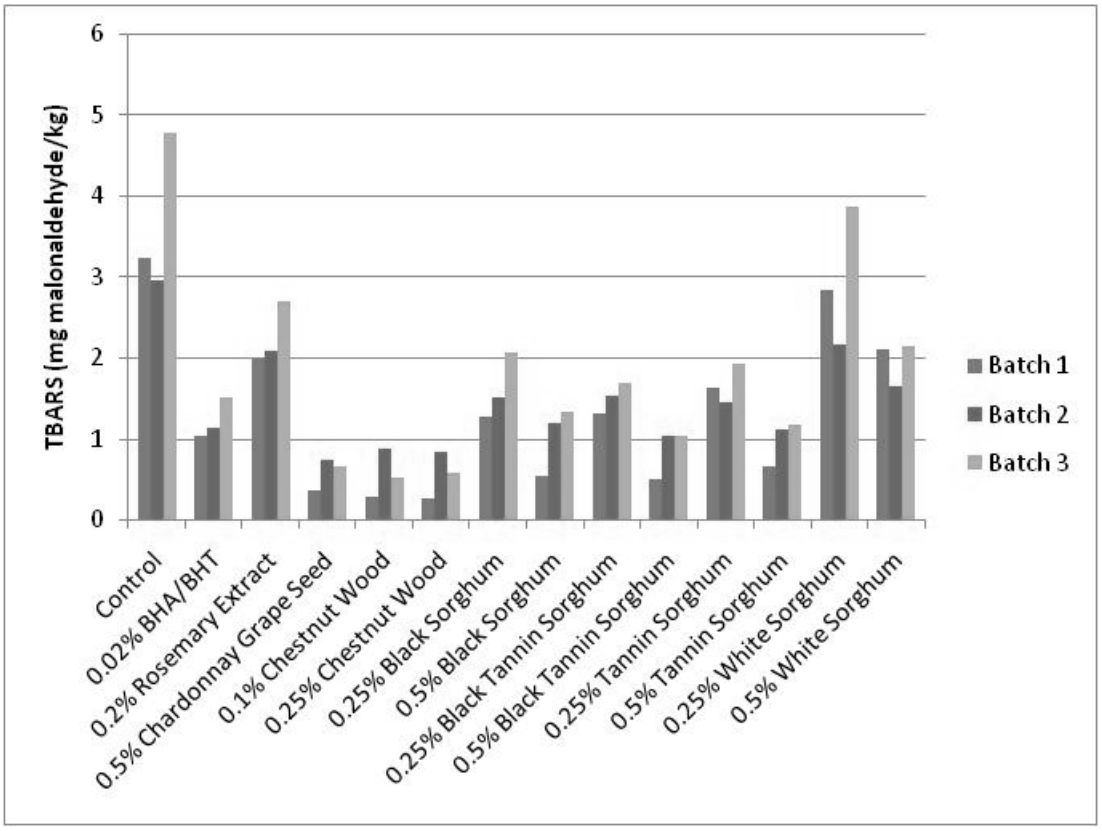


Figure 2 - Study 1 least squares means for batch by treatment interaction for TBARS values (mg malonaldehyde/kg) of pre-cooked ground beef patties.

P-value = <0.0001 from Analysis of Variance Table
Root Mean Square Error = 0.614

pH Values

Treated raw patties were used for all analyses other than TBARS analysis. Batch interactions and treatment by day interactions were tested in initial data analysis models and were significant, however, mean squares error was 0.048. With such low mean squares error, very small differences in pH, ie. 0.05, were significant; it was determined that with so little error, the interactions were not interpretable and the interactions were pooled into the error term. Treatment did not have an impact on pH ($P=0.66$), but batch was significant ($P<0.0001$, Table 3). However, the least squares means for batches 1, 2, and 3 were 5.78, 5.71, and 5.74, respectively, and these values were not so different as to rule out the most probable justification for the dissimilarity, that being retail meat purchased at three different times likely varied in pH before treatment addition.

Storage day effected pH values ($P<0.0001$, Table 1). Over the first three days of storage, pH values steadily and significantly increased and then experienced a sudden drop on day 5. This pH decline is inconsistent with the findings of Jenschke (2004) and Hemphill (2006), whose data showed a steady pH increase over time. Their justification for the pH increase included aerobic bacterial growth and treatment solubilization. *Pseudomonas* and other aerobic bacteria are known to increase the pH of their host environment due to their release of ammonia as a by-product during metabolism (Kakouri & Nychas, 1994). Jenschke (2004) and Hemphill (2006) also pointed to solubilization of sorghum treatments over time as a possible explanation for the significant pH increase with storage in their studies. Cruzen (2010) reported a pH increase from day 0 to day 1 and then a decrease for the last two days of measurement

(d3 and d5). These results are similar to those in this study in that there was a pH increase to begin with (d1 and d3), and then a pH decrease toward the end of storage (d5). Cruzen (2010) reasoned that, based on her low raw ingredient pH measurements, solubilization of treatments over time was a valid hypothesis for her findings. pH measurements of the 6 tannin treatments used in this study were taken in triplicate after 25g of each individual treatment was mixed with 50ml ddH_2O. With the exception of WS (6.04) all treatments averaged a pH of less than 5.6. The remaining three sorghum bran varieties ranged in average pH between 5.44 and 5.57 while CN (4.11) and CG (4.96) had the lowest pH measurements. It is reasonable to conclude that solubilization over time of these low pH treatments caused the pH decline that occurred in this study on the fifth day.

Cook Yield

Cook yield by batch ($P=0.0002$, Table 3), treatment ($P=0.01$, Table 1), and their two-way interaction ($P<0.0001$) were significant. Cook yield was highest for batch 1 and lowest for batch 3; all three batches were different ($P<0.05$, Table 3). Cook yields by treatment generally ranged from 68% to 73% with 0.1% CN having the lowest least squares means and 0.25% BTS having the highest least squares means overall for cook yield (Table 1). There was no noticeable trend as to which treatments generally caused a higher or lower cook yield. It did not appear that treatment level impacted cook yield, nor did the data indicate that a specific type of treatment (bran, wood powder, seed flour, extract, etc.) resulted in cook yield effects in any particular way. A correlation was calculated to determine if pH and cook yield were related. pH was not found to have

any impact on cook yield (r=-0.03). This meant that cook yield differences between treatments were not correlated to pH and there must be another explanation for the cook yield differences. Ingredient addition of BTS improved cook yield and most likely affected water holding capacity. The specific mechanism needs to be evaluated. The cook yield batch by treatment graph (Figure 3) showed the variations in cook yield within a treatment between batches. Drip loss occurs when water and volatilized fats are released from meat during the cooking process. With a continued increase in leakage, cook yield decreases. As internal temperature rises, more protein denaturation occurs and internal water floods the surface of the meat where evaporation and drip occur (Godsalve, Davis, Gordon, & Davis, 1977). Though all cooked patties were cooked to an internal temperature of 73°C in this study, human error, and improper thermocouple placement cannot be disregarded as possible influences in cook temperature and therefore cook yield rather than actual treatment effects. However, it is more likely that raw material and patty formation variation was the cause of the variation in cook yield. Variation presented as root mean square error was high for cook yield (RMSE=4.121) and was most likely due to formation of patties using the hand press. Since patties were hand formed the pressure each patty endured during formation was not uniform and differences would have resulted in some patties being more compact than others. Pressure during formation of ground beef patties has been shown to affect ground beef patty cook yield (Roth, McKeith, & Brewer, 1999). As expected, day effects and day by treatment interaction were not significant for cook yield as all patties within a treatment

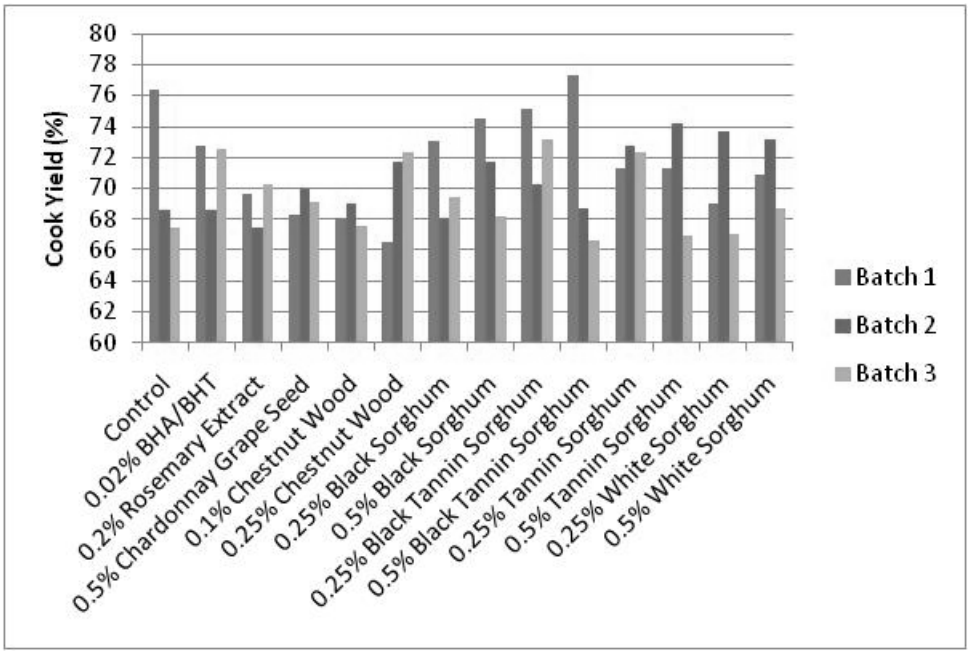


Figure 3 – Study 1 least squares means for batch by treatment interaction for cook yield (%).

P-value = <0.0001 from Analysis of Variance Table
Root Mean Square Error = 4.121

were cooked on the same baking sheet and entered the oven at the same time on the same day.

CIE Color Space Values

Instrumental color measurements were obtained on all raw patties using CIE color space values (L*, a*, b*) rather than Hunter Lab-values as they are preferred for use with meats by AMSA because of their emphasis on the red part of the spectrum (AMSA, 1991). The L* component represents color lightness; the higher the value, the more white (bright) the color. The a* component measures color between red/magenta and green with higher values corresponding to more magenta colors. The b* component measures color between blue and yellow with higher values corresponding to more yellow colors. There were significant treatment effects for all three color space values ($P<0.0001$, Table 1). In general, BS and BTS had the lowest scores for L*, a*, and b* color space values. This is likely due to these two sorghums having exceptionally dark color in their powdered bran form. The highest color space values were measured from patties containing RM and were generally followed by control patties.

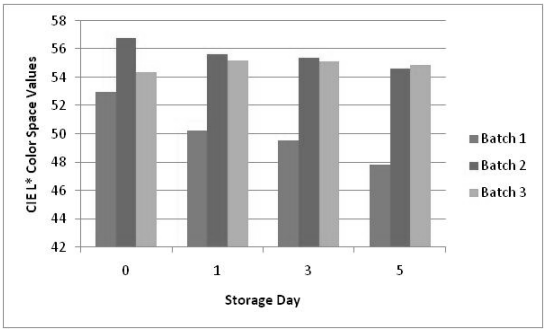
With storage L*, a*, and b*, values all decreased with the exception of d5 b*, that showed a slight increase on d5 ($P<0.0001$, Table 1). Results for day effects on a* color space values and the first three days of b* color space values coincided with those of Hemphill (2006), and Jenshke (2004), as well as Luchsinger, Kropf, García Zepeda, Hunt, Stroda, Marsden, & Kastner (1997) who reported that over 7 days of aerobic storage ground beef patties decreased in a* and b* color space values. The slight increase of yellowness on day 5 of this study may be explained by referring to treatment effects of b* color space

values (Table 1). There was a significant difference in yellow color between those treatments that were dark in their raw powdered form (CG, CN, BS, BTS, and TS) and those that were not. These darker treatments, in general, have lower b* color space values. These same dark treatments, especially CG, BS, BTS, and TS, were the ones that had the highest visible ingredient specks counts ($P<0.0001$), which will be discussed in the following section. Speck counts did not change significantly over storage ($P=0.20$), indicating dark speck presence on the patty surface may have influenced b* color space values equally from day 0 to day 5. Patties containing ingredients that were not dark may have become less yellow with time and affected b* color space values in a negative way. Patties containing darker treatments, because of speck influence, did not decrease in b* color space values as much. The two groups of treatments and their opposing affects on b* values may have been responsible for the slight increase in b* color space values on day 5. One group included those of lighter color and no significant ingredient speck influence that steadily decreased in b* color space values, and the other group included those treatments of dark color with significant ingredient speck influence that did not significantly decrease in yellowness. Hemphill (2006) and Cruzen (2010) reported L* color space values that decreased for the first three days of storage, but then increased on day 5. The decrease in lightness in this study over all storage days was likely because of ingredient pigment solubilization and myoglobin oxidation that darkened the patty as the transition to metmyoglobin took place (Pierson, Collins-Thompson, & Ordal, 1970).

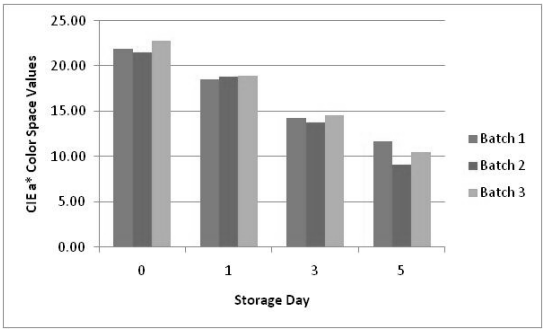
Batch affected all three color space values slightly differently ($P<0.0001$, Table 1). Batch effects, as reasoned previously, were expected. Batch 1 gave the lowest L* color space values and mid-range a* and b* color space values. Batch 2 had the highest

L* and the lowest a* and b* color space values. Batch 3 L* color space measurements fell between the other two batches, but the a* and b* color space values were the highest. L* color space values decreased over the course of the 5 days of storage. Batch by day interaction was significant ($P<0.0001$) for L*, a*, and b* color space values (Figures 4(a), (b), and (c), respectively). The most obvious trend was that batch 1 yielded the lowest L* color space values across all days of storage juxtaposed to batch 2 and 3. The meat purchased for batch 1 was apparently significantly darker in color before any treatment addition or processing began. For the most part batch 3 lightness measurements fell between those of batch 1 and 2, except for storage day 5. This indicates that batch 3 patties became darker quicker than batch 2 patties. CIE a* color space values tended to be lowest for batch 2 except on day 1 when they were only slightly less than batch 3 (18.87 and 18.93, respectively). The d5 increase in yellow color, discussed previously, could be seen for batches 2 and 3 in Figure 4(c). With the exception of day 3, batch 1 showed the lowest b* color space values while batch 3 generally showed the highest.

Batch by treatment interactions were significant for L* ($P=0.0005$, Figure 5(a)) and a* ($P=0.0021$, Figure 5(b)) color space values. For L* color space values it is apparent that batch 1 measurements were lowest and batch 2 measurements generally ranked between the first and last batch. This was not the case however, for batch 2 control patties, which had the highest L* color space values. Batch by treatment effects varied greatly for a* color space values. Regardless of the treatment, batch 3 never produced the lowest redness measurements compared to the other two batches. a* color



(a)



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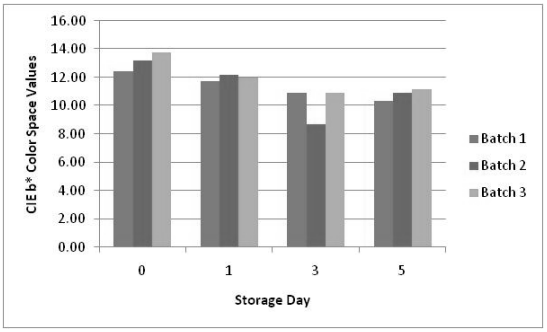
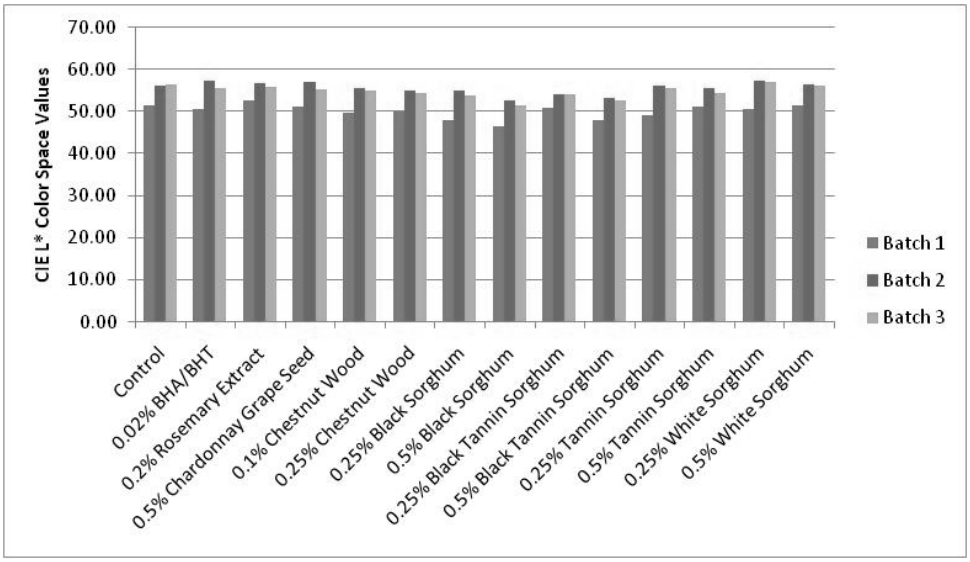
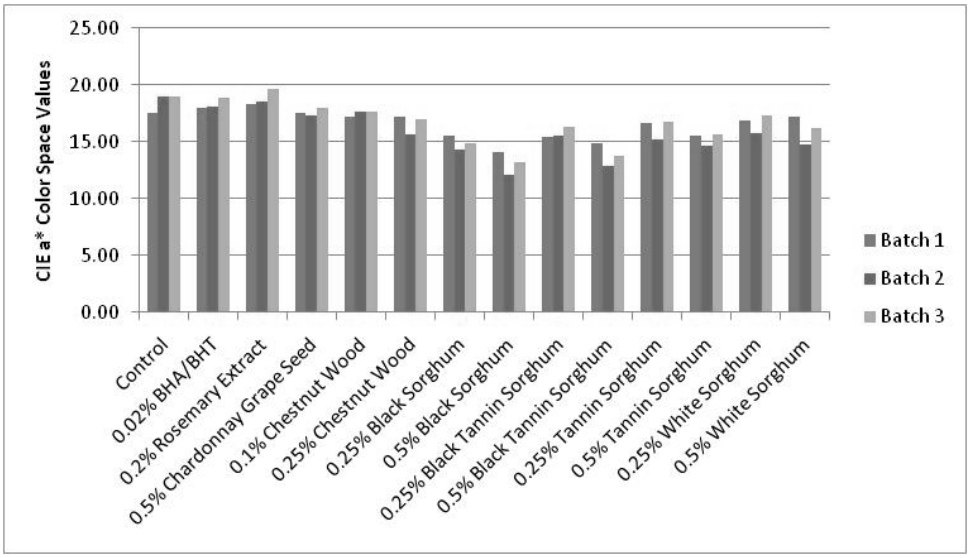


(c)

Figure 4 - Study 1 least squares means for batch by storage day interaction for CIE (a) L*, (b) a*, and (c) b* values of raw ground beef patties from Analysis of Variance Table.



(a)



(b)

Figure 5 – Study 1 least squares means for batch by treatment interaction for (a) CIE L* (P=0.0005, RMSE=1.237), and (b) CIE a* (P=0.0021, RMSE=1.174) values of raw ground beef patties from Analysis of Variance Table.

space values were the only color space values that showed a significant treatment by day interaction ($P<0.0001$, Figure 6). Across all treatments, a* color space values decreased with storage day.

Subjective Color Evaluation

Trained panelists evaluated patty surface lean color, percent discoloration, brown discoloration, and visible speck count all of which were significantly impacted by treatment ($P<0.0001$, Table 4). Lean color scores were lowest (darkest) and percent discoloration scores were highest for patties containing a sorghum bran treatment and even more so in the higher percent addition sorghum bran treatments (0.5% rather than 0.25%). This agreed with subjective results from the research of both Hemphill (2006) and Jenschke (2004). Brown discoloration was darker in patties containing 0.25% CN, BS, BTS, and TS. The darkest of which were found in 0.5% BS and 0.5%BTS (Table 3). Visible ingredient speck count was highest in CG, BS, BTS, and TS. The highest values again come from 0.5% BS and 0.5% BTS. Lean color, percent discoloration, brown discoloration, and speck count were all likely influenced by treatment color prior to meat addition. Day effects existed ($P<0.0001$) for all subjective measurements except speck count ($P=0.20$), which indicated that the specks did not fade or multiply over time, nor did they become harder to see or more noticeable (Table 4). With storage time, lean color and brown discoloration became darker and percent discoloration increased. This can be attributed to metmyoglobin formation over time (Pierson *et al.,* 1970).

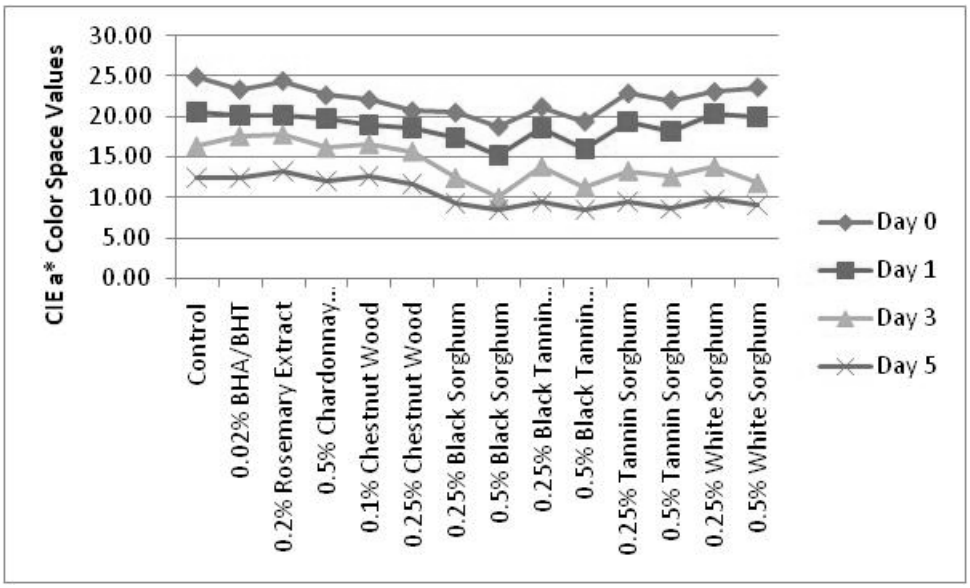


Figure 6 – Study 1 least squares means for treatment by storage day interaction for CIE a* values of raw ground beef patties.

P-value = <0.0001 from Analysis of Variance Table
Root Mean Square Error = 1.174

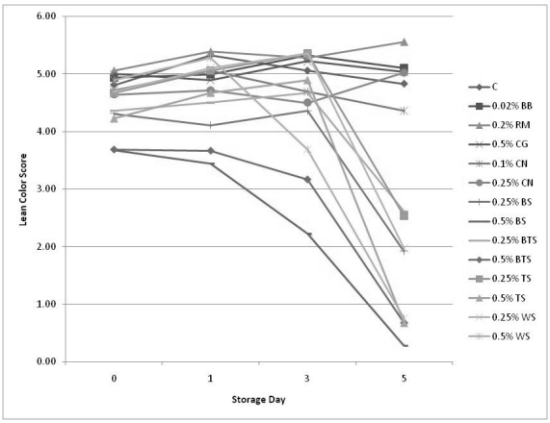
Table 4. Study 1 least squares means for raw lean color, percent discoloration, brown color, and visible ingredient specks.

Effect	Lean Color[a]	Discolor %	Brown Color[b]	Specks[c]
RMSE	0.855	10.474	0.473	4.886
Treatment[d]	<0.0001	<0.0001	<0.0001	<0.0001
Control	5.01^{ij}	28.61^{f}	1.57^{fg}	0.30^{e}
0.02% BHA/BHT	5.10^{ij}	20.28^{e}	1.40^{ef}	0.53^{e}
0.20% Rosemary Extract	5.32^{j}	20.28^{e}	1.22^{e}	0.47^{e}
0.5% Chardonnay Grapeseed	5.03^{ij}	21.28^{e}	1.74^{gh}	17.12^{f}
0.1% Chestnut	4.71^{hi}	24.38^{ef}	1.81^{gh}	0.47^{e}
0.25% Chestnut	4.72^{hi}	29.93^{f}	2.24^{j}	0.60^{e}
0.25% Black Sorghum	3.67^{f}	46.32^{ij}	2.72^{kl}	44.67^{h}
0.5% Black Sorghum	2.40^{e}	56.53^{k}	3.15^{m}	71.13^{j}
0.25% Black Tannin Sorghum	4.03^{fg}	39.51^{gh}	2.76^{kl}	32.65^{g}
0.5% Black Tannin Sorghum	2.80^{e}	52.22^{jk}	2.93^{lm}	53.08^{i}
0.25% Tannin Sorghum	4.40^{gh}	41.74^{ghi}	2.16^{ij}	15.76^{f}
0.5% Tannin Sorghum	3.61^{f}	45.21^{hi}	2.53^{k}	30.28^{g}
0.25% White Sorghum	4.28^{gh}	39.44^{g}	1.87^{h}	0.97^{e}
0.5% White Sorghum	3.65^{f}	44.72^{ghi}	1.96^{hi}	2.35^{e}
Storage Day[d]	<0.0001	<0.0001	<0.0001	0.20
0	4.55^{f}	0.00^{e}	0.00^{e}	18.77
1	4.73^{f}	10.20^{f}	1.79^{f}	20.28
3	4.56^{f}	51.67^{g}	3.10^{g}	19.18
5	2.95^{e}	84.13^{h}	3.70^{h}	19.03
Batch[d]	0.0005	0.0002	<0.0001	<0.0001
1	3.95^{e}	36.96^{f}	2.32^{f}	17.58^{e}
2	4.25^{f}	39.23^{f}	2.03^{e}	18.09^{e}
3	4.39^{f}	33.30^{e}	2.10^{e}	22.27^{f}

[a]Subjective Lean Color: 8=Grayish pink, 5=Cherry red, 1=Brick red.
[b]Subjective Brown Color: 1=Light grayish brown, 5=Dark brown.
[c]Number of ingredient specks measured in a random 2.54 cm^2 area on patty.
[d]*P*-value from analysis of variance tables.
[e-m]Mean values within a column and followed by the same letter are not significantly different ($P > 0.05$).
Storage at 4°C over 5 days.

Batch was significant for all subjective color measurements (Table 4). Lean color scored lighter (increased in value) over the course of the three batches ($P=0.0005$). Percent discoloration was measured lower for batch 3 than the first two batches ($P=0.0002$). Brown discoloration was darkest in batch 1 patties ($P<0.0001$), and speck counts were highest in the third batch ($P<0.0001$). These differences between batches were most probably due to natural differences in the raw meat material.

Treatments by day interactions were significant for all four subjective color measurements (Figure 7). Lean color scores (Figure 7(a)) were lowest (darker in color) across all storage days for 0.5% BS and 0.5% BTS treatments ($P<0.0001$). An extreme drop in lean color score was reported from day 3 to day 5 for 0.5% TS and a similar drop in lean color score was indicated for 0.5% WS between day 1 and day 5. These dramatic decreases in lean color score indicated dramatic increases in patty surface darkening. It is also important to note that there was little to no decrease in lean color score over the five days of storage for the following treatments: control, BHA/BHT, RM, 0.1% CN, and 0.25% CN. Percent discoloration increased over time for all patties regardless of treatment ($P<0.0001$, Figure 7(b)). However, sorghum bran treated patties were higher in percent discoloration on days 1-5, and 0.5% BS and 0.5% BTS had the highest percent discolored patties out of all the treatments over all storage days. Brown discoloration scores also increased for all treatments over the 5 days of storage ($P<0.0001$, Figure 7(c)), and again 0.5% BS and 0.5% BTS were generally the high scorers. The lowest brown discoloration scores on day 1 were given to patties containing no added ingredient, RM, BHA/BHT, 0.25% WS, and 0.5% WS. While the



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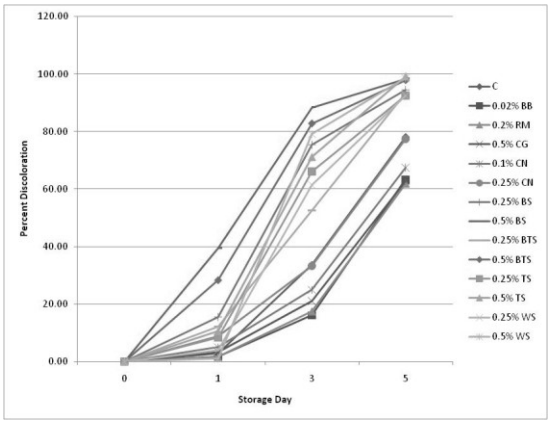

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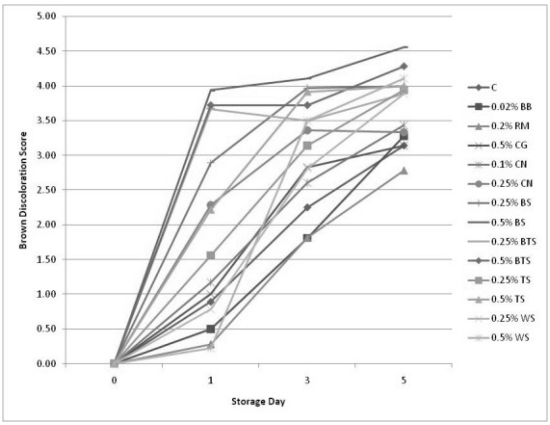

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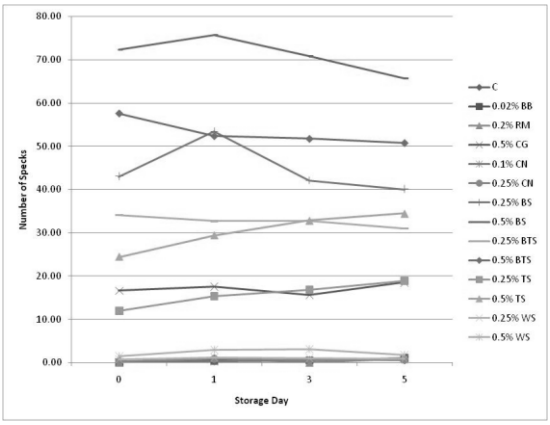
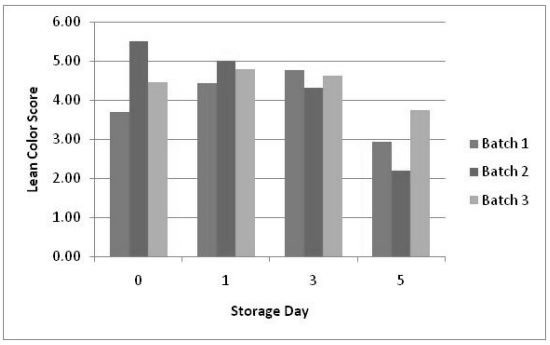


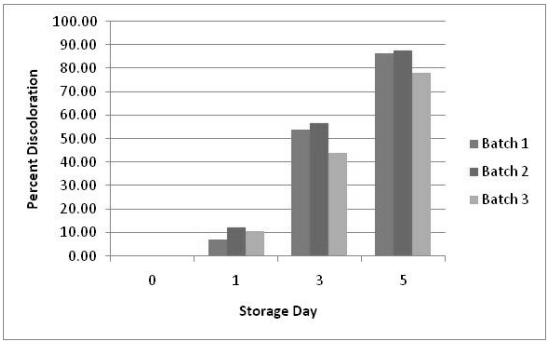
(d)

Figure 7 – Study 1 least squares means for treatment by storage day interaction for subjective color evaluation (a) lean color (P<0.0001, RMSE=0.855), (b) percent discoloration (P<0.0001, RMSE=10.474), (c) brown discoloration (P<0.0001, RMSE=0.473), and (d) number of specks (P=0.0073, RMSE=4.886) from Analysis of Variance Table.
(C=control, BB=BHA/BHT, RM=Rosemary Extract, CG=Chardonnay grape seed, CN=Chestnut wood, BS=Black Sorghum, BTS=Black Tannin Sorghum, TS=Tannin Sorghum, WS=White Sorghum.)

control, RM and BHA/BHT patties maintained their low scoring positions compared to other treatments over the entire storage period, 0.25% and 0.5% WS treated patties significantly darkened from day 1 to day 3. Across all 5 days of storage, there were 7 treatments (0.25 and 0.5% BS, 0.25% and 0.5% BTS, 0.25% and 0.5% TS, and 0.5% CG) that displayed a significant visible ingredient speck count ($P=0.0073$, Figure 7(d)). It was noticeable that as the number of specks slightly decreased over time for 0.25 and 0.5% BS and BTS, it increased for 0.25 and 0.5% TS. Both levels of BS showed a maximum speck count on day 1, which was not the case for any other treatment. Batch by storage day interactions were also significant for all subjective color evaluations (Figure 8). Lean color scores in batch 2 are observed to gradually decrease over the 5 days of storage ($P<0.0001$, Figure 8(a)). Batch 1 lean color scores actually opposed those of batch 2 for the first 3 days of storage by increasing, and then drastically decreased on day 5 to values less than those on day 0. Batch 3 lean color scores increased from day 0 to day 1 and then decreased for the remainder of storage length. An increase in percent discoloration was observed from day to day in all batches ($P=0.0021$, Figure 8(b)). There was zero discoloration on day 0 for all 3 batches. Batch 3 showed the lowest percent discoloration values on days 3 and 5, but batch 1 had the lowest values on day 1. This suggested that discoloration was slow to be initiated in patties made during batch 1, but once it began, it proceeded at a faster rate than patties from batch 3. Brown discoloration scores on day 1 were highest in batch 3 patties, but were surpassed on days 3 and 5 by brown discoloration scores from batch 1 patties ($P<0.0001$, Figure 8(c)). Brown discoloration scores did steadily increase over storage



(a)



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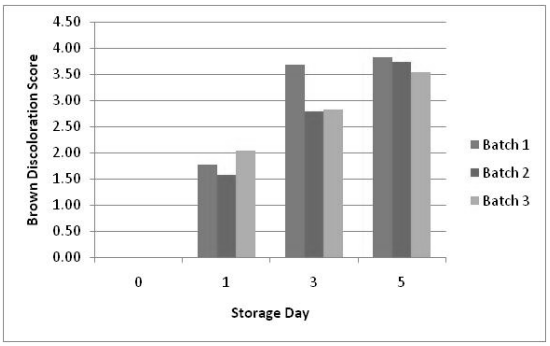

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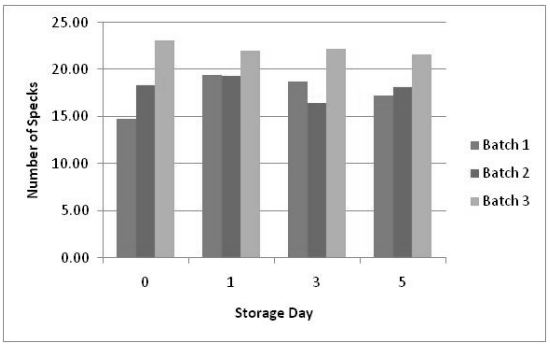
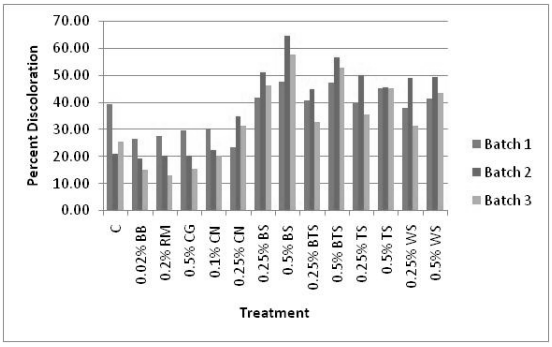


(d)

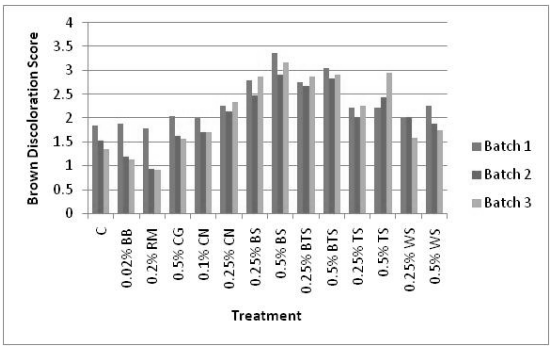
Figure 8 – Study 1 least squares means for batch by storage day interaction for subjective color evaluation (a) lean color (P<0.0001, RMSE=0.855), (b) percent discoloration (P=0.0021, RMSE=10.474), (c) brown discoloration (P<0.0001, RMSE=0.473), and (d) number of specks (P=0.0123, RMSE=4.886) from Analysis of Variance Table.

for all batches. Number of specks counted during batch 1 showed the most variation out of all the batches while batch 3 speck counts showed the least amount of variation ($P=0.0123$, Figure 8(d)).

Batch by treatment interactions were significant for percent discoloration ($P<0.0001$, Figure 9(a)), brown discoloration ($P=0.0081$, Figure 9(b)), and number of specks ($P<0.0001$, Figure 9 (c)). Percent discoloration over all three batches was highest in patties containing a sorghum treatment (Figure 9(a)). For the control patties and patties containing BHA/BHT, RM, CG, or 0.1% CN treatments, batch 1 yielded the highest discoloration percentages. However, for the remaining treatments (0.25% CN and all sorghum bran treatments) batch 2 had the highest discoloration percentages compared to the other 2 batches. Batch to batch interactions indicate that ingredient addition affected discoloration differently depending on beginning raw material. This was most likely due to the age of raw material, extent of metmyoglobin development at initiation of the study in the raw material, and probable differences in raw material source. It is possible that a relationship existed between the state of the raw ground beef and the added ingredient that would have caused one group of treatments to increase percent discoloration far more in one batch of meat, while the other treatment group resulted in another batch of raw meat to discolor most. In batch 1, brown discoloration scores were highest for 0.5% BS or 0.5% BTS and lowest for the control and RM (Figure 9(b)). In batch 2 the darkest brown discoloration again occurred in patties containing 0.5% BS or 0.5% BTS, but the lowest scores were in patties treated with



(a)



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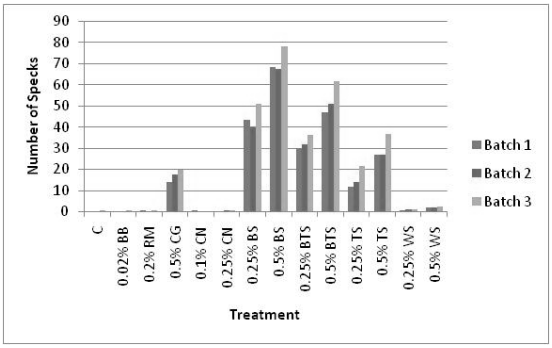


(c)

Figure 9 – Study 1 least squares means for treatment by storage day interaction for subjective color evaluation (a) percent discoloration ($P<0.0001$, RMSE=10.474), (b) brown discoloration ($P<0.0081$, RMSE=0.473), and (c) number of specks ($P<0.0001$, RMSE=4.886) from Analysis of Variance Table.
(C=control, BB=BHA/BHT, RM=Rosemary Extract, CG=Chardonnay grape seed, CN=Chestnut wood, BS=Black Sorghum, BTS=Black Tannin Sorghum, TS=Tannin Sorghum, WS=White Sorghum.)

BHA/BHT or RM. Batch three patties containing 0.5% BS or 0.5% TS and 0.5% BTS were highest in brown discoloration score, and the lightest brown discoloration was observed to be in BHA/BHT and RM. Number of specks were highest in batch 3 patties for all treatments except 0.1 and 0.25% CN (Figure 9(c)). There was a high correlation (r=0.77) between percent surface discoloration and brown discoloration. This means that as percent surface discoloration increased, the brown color scores increased indicating darker brown coloring.

Based on the results from study 1, 0.1% CN and 0.5% CG would likely be the most recommended antioxidant treatments for addition to ground beef systems. These treatments had the most powerful antioxidant effect and almost entirely stopped the lipid oxidation process according to TBARS data. Additionally, patties from these treatments did not show negative color effects in raw patties. Neither 0.1% CN nor 0.5% CG showed very high ingredient speck counts compared to the more effective sorghum bran antioxidant treatments. However, existing ingredient speck counts would likely become a non-issue after further processing the flour or powder into a finer grind or using an extract.

Study 2. Consumer Sensory Study

TBARS Values

Levels of lipid oxidation in pre-cooked ground beef patties and treatment inhibitory effects were measured on days 0 and 1 for 6 of the treatments analyzed in the first study using TBARS values (mg malonaldehyde/kg sample). Treatment, storage day, and their two-way interaction were all significant for TBARS values in study 2

(Table 5, Figure 10). Treatment effects were similar to those in study 1 with there being no significant difference between TBARS values for 0.5% CG, 0.1% CN, and 0.5% BTS ($P<0.0001$). Storage day resulted in increased TBARS values from day 0 to day 1 as expected under pro-oxidation conditions ($P<0.0001$). Figure 10 showed that all treatments inhibited lipid oxidation on day 0. TBARS values did not significantly change from day 0 to day 1 for patties with 0.5% CG, 0.1% CN, or 0.5% BTS. TBARS results indicated that all five antioxidant treatments were effective at inhibiting lipid oxidation. They also showed, as they did in the first study, that upon addition of 0.5% CG, 0.1% CN, and 0.5% BTS, the lipid oxidation process nearly ceased. The high phenol, particularly tannin, content of these three treatments was likely the reason for their efficient lipid oxidation inhibition.

Batch (Table 5) and batch by day ($P=0.0008$, Figure 11) also influenced TBARS values. Batch 2 and 3 produced significantly lower TBARS values than batch 1 ($P=0.0005$). TBARS values measured on both day 0 and day 1 were highest for batch 1. TBARS values were lowest on day 0 during batch 3, but on day 1, batch 2 had lower levels of lipid oxidation than the other two batches. Batch differences such as these were representative of the variation in retail ground beef products purchased on different days. The meat purchased for batch 1 was likely more oxidized initially. This could have occurred for a variety of reasons including the ground beef may have contained older meat, have been processed under conditions that promote lipid oxidation, the meat source may have varied, and transportation conditions may have varied to induce lipid oxidation differences.

Table 5. Study 2 least squares means for cooked TBARS values, raw pH, cook yield, and raw external color attributes.

Effect	TBARS	pH	Cook Yield %	CIE Color Space Values L*	a*	b*
RMSE[b]	0.269	0.044	2.941	2.063	1.597	1.342
Treatment[a]	<0.0001	0.39	0.65	<0.0001	<0.0001	<0.0001
Control	2.10[e]	5.77	72.71	56.07[de]	23.70[f]	11.89[e]
0.02% BHA/BHT	1.04[d]	5.77	71.46	56.53[e]	23.71[f]	11.55[e]
0.20% Rosemary Extract	1.15[d]	5.78	72.46	56.04[de]	23.66[f]	11.95[e]
0.5% Chardonnay Grapeseed	0.63[c]	5.79	72.24	55.44[d]	22.88[e]	11.64[e]
0.1% Chestnut	0.63[c]	5.80	72.60	55.20[d]	22.02[d]	10.81[d]
0.5% Black Tannin Sorghum	0.71[c]	5.80	72.69	53.21[c]	18.88[c]	9.28[c]
Storage Day[a]	<0.0001	0.0011	0.39	0.55	<0.0001	<0.0001
0	0.79[c]	5.77[c]	71.86	55.33	24.28[d]	11.83[d]
1	1.30[d]	5.80[d]	72.69	55.50	20.67[c]	10.54[c]
Batch[a]	0.0005	<0.0001	<0.0001	<0.0001	<0.0001	0.001
1	1.22[d]	5.67[c]	72.75[d]	57.24[e]	21.81[c]	11.58[d]
2	1.04[c]	5.80[d]	70.08[c]	56.32[d]	22.55[d]	11.24[d]
3	0.89[c]	5.89[e]	74.76[e]	52.69[c]	23.07[d]	10.75[c]

[a]*P*-value from analysis of variance tables for each main effect.
[b]RMSE = Root mean square error from Analysis of Variance tables.
[c-f]Mean values within a column and main effect followed by the same letter are not significantly different ($P > 0.05$).
Storage at 4°C over 1 day.

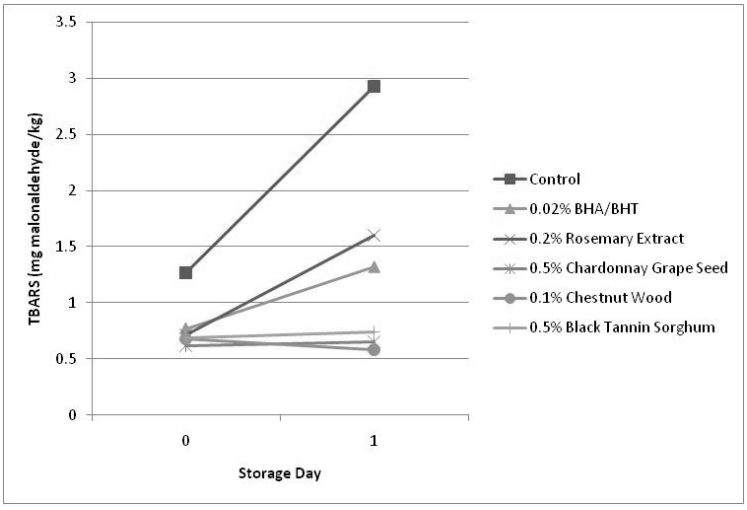


Figure 10 – Study 2 least squares means for treatment by storage day interaction for TBARS values of pre-cooked ground beef patties.

P-value = <0.0001 from Analysis of Variance Table
Root Mean Square Error = 0.269

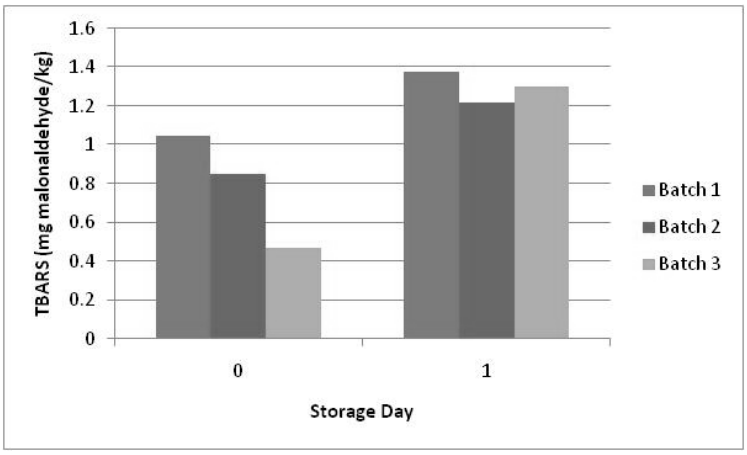


Figure 11 – Study 2 least squares means for batch by storage day interaction for TBARS values of pre-cooked ground beef patties.

P-value = 0.0008 from Analysis of Variance Table
Root Mean Square Error = 0.269

pH Values

pH was measured in triplicate on day 0 and day 1 on raw patties. The 3 pH readings were averaged to give a representative pH value of each patty. Treatment, like in study 1, did not have an effect on pH measurements (P=0.39), but storage day affected pH (P=0.0011, Table 5). pH rose slightly from day 0 (5.77) to day 1 (5.80). This pH increase after 1 day of storage was consistent with the results from the first study as well as the results from the research of Jenschke (2004), Hemphill (2006), and Cruzen (2010) as discussed previously. An increase in pH could be justified by an increase in aerobic bacterial growth such as *Pseudomonas,* which are known to increase the pH of their surroundings because of their waste products (Kakouri, *et al.,* 1994).

Batch, batch by treatment, and batch by day interactions affected pH values. pH values were lowest in batch 1 patties and highest in batch 3 (P<0.0001, Table 5). This batch effect was consistent across all treatments (P=0.0416, Figure 12) and days (P<0.0001, Figure 13). It was interesting to note that though day effect caused an overall increase in pH values, and this increase was evident in batch 2 and 3, it was not the case for batch 1. Figure 13 showed a decrease in pH values from day 0 to day 1 during batch 1. All batch effects could be attributed to meat variation as explained previously.

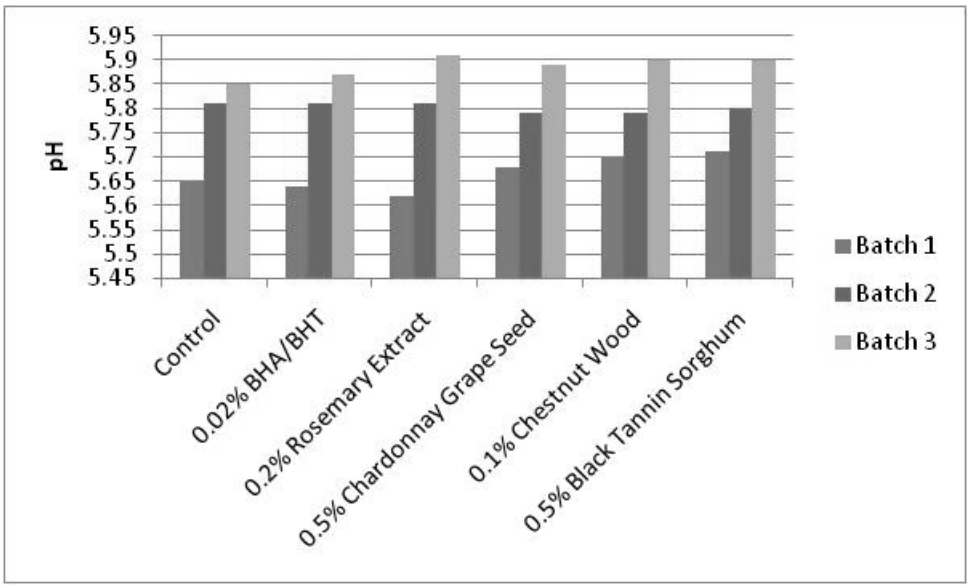


Figure 12 – Study 2 least squares means for batch by treatment interaction for pH values of raw ground beef patties.

P-value = 0.0416 from Analysis of Variance Table
Root Mean Square Error = 0.044

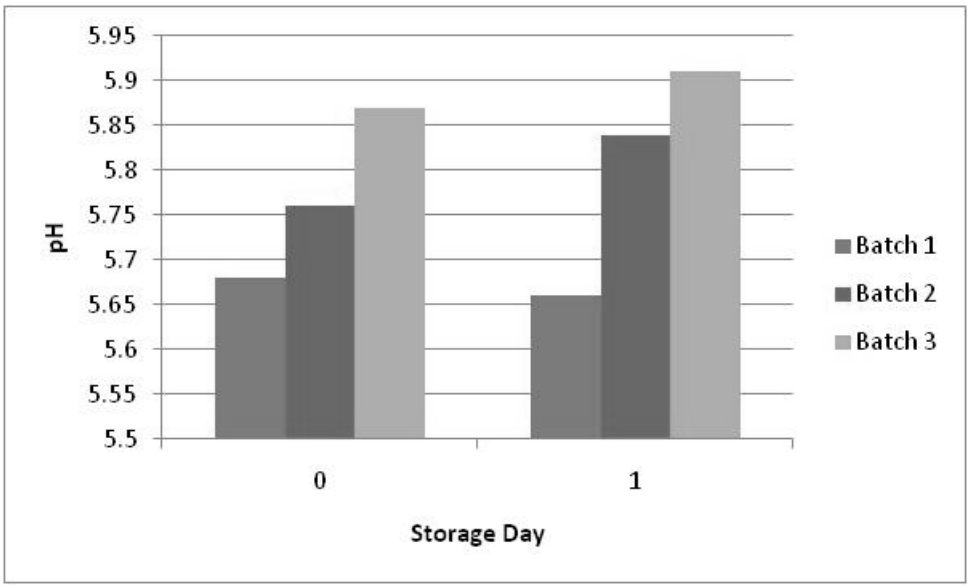


Figure 13 – Study 2 least squares means for batch by storage day interaction for pH values of raw ground beef patties.

P-value = <0.0001 from Analysis of Variance Table
Root Mean Square Error = 0.044

Cook Yield

Batch effects and batch by treatment interaction were significant for cook yield. In general, batch 2 produced the lowest percent cook yields while batch 3 had the highest ($P<0.0001$, Table 5). This batch effect was the case for all treatments except one ($P=0.0014$, Figure 14). Batch 1 actually showed higher cook yields for RM than the other two batches this was most logically the result of variability in patty formation as well as raw material source variation.

CIE Color Space Values

There were significant treatment effects for all three color space values ($P<0.0001$, Table 5). BTS had the lowest scores for L*, a*, and b* color space values. This is likely due to the exceptionally dark color of BTS in the powdered bran form. The highest color space values were measured from patties containing no treatment, BHA/BHT, or RM. The instrumental color results from study 2 were consistent with those from study 1.

Day did not significantly affect L* color space values ($P=0.55$). However, there was a significant decrease in L* color space values between day 0 and 1 in study 1. The difference between the least squares means L* values for days 0 and 1 for both studies was similar (0.92-1.01). L* color space value change from 0 to 1d was most likely not significant in study 2 as the variability in L* color space values in study 2 was less than in study 1 as few storage days were included in study 2, these results were not surprising. With storage a* and b* color space values decreased significantly from day 0 to day 1 ($P<0.0001$, Table 5). This complimented the results from study 1, and those of

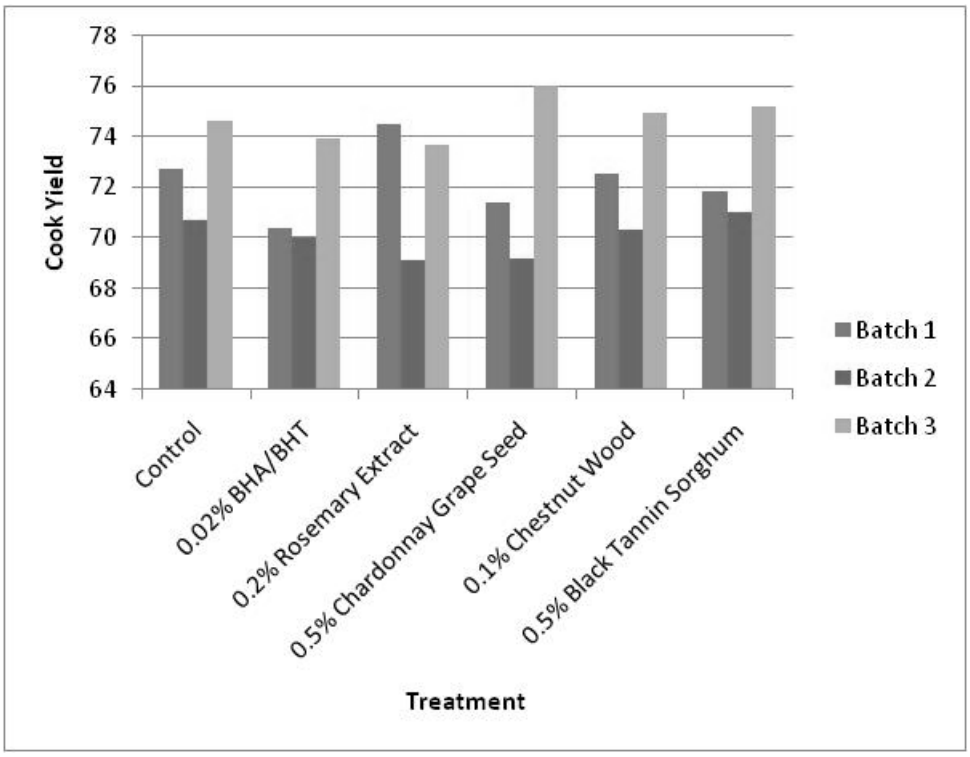


Figure 14 – Study 2 least squares means for batch by treatment interaction for cook yield (%).

P-value = <0.0014 from Analysis of Variance Table
Root Mean Square Error = 2.941

Hemphill (2006), Jenshke (2004), and Luchsinger, *et al.* (1997) who found that a* and b* color space values decreased during aerobic storage of ground beef patties. With storage and aging of the aerobically packaged patties, discoloration has been associated with increased darkening, less red (more green), and less yellow (more blue) color.

Batch affected all three color space values slightly differently (Table 5). Batch effects, as reasoned previously, were expected. Batch 1 gave the highest L* color space values ($P<0.0001$) while it produced the lowest a* values ($P<0.0001$) and was not different from batch 2 in terms of b* color space values (both resulted in higher values than batch 3). Batch 3 had the lowest L* color space values, produced higher a* color space values than batch 1 that were not different than batch 2, and had the lowest b* values ($P=0.001$).

The treatment by day interaction was significant ($P=0.0151$) for L* color space values (Figure 15). BHA/BHT, CG, and CN treated patties did not appear to change in brightness between days 0 and 1. RM treated patties decreased slightly over time while control patties appeared to be most negatively affected by storage in terms of L* values. An increase in brightness from day 0 to day 1 was associated with the BTS treatment. The deep color of this treatment probably had a darkening effect that was more influential on day 0 L* measurements than day 1. The dark BTS treatment pigment may have solubilized and possibly migrated from the surface to the interior of the patty between days 0 and 1 causing lightening and L* color space measurement increase.

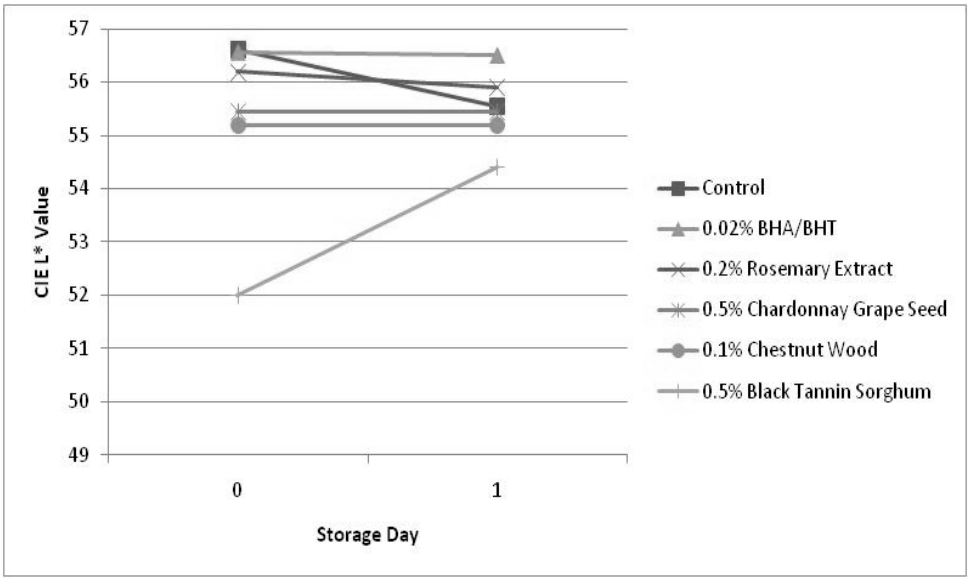


Figure 15 – Study 2 least squares means for treatment by storage day interaction for CIE L* values of raw ground beef patties.

P-value = 0.0151 from Analysis of Variance Table
Root Mean Square Error = 2.063

a* color space values were affected by batch by day interactions (P=0.01, Figure 16). Patties from all 3 batches experienced an overall decrease in red/magenta color from day 0 to day 1. Batch 1 patties had the largest decrease in a* color space values while patties from batch 2 had the least difference in a* values between the two days of storage.

Batch by treatment interactions were significant for both a* (P=0.0058, Figure 17(a)) and b* (P=0.0342, Figure 17(b)) color space values. Across batches 1, 2, and 3, a* color space values increased for four treatments (control, BHA/BHT, RM, and CG). CN treated patties had higher a* values in batch 2, while BTS treated patties had lower a* values in batch 2. Across batches 1, 2, and 3, b* color space values decreased for four treatments (RM, CG, CN, BTS). Control patties experienced an increase in yellow color across the three batches, and BHA/BHT treated patties yielded the lowest b* values during batch 2.

Subjective Color Evaluation

Trained panelists evaluated patty surface lean color, percent discoloration, and brown discoloration as they did in study 1. Trained panelists did not take speck counts during the second study on the basis that treatments for study 2 were selected from those used in study 1 and they were added at the same percentages so speck counts were expected to be similar between studies. Lean color, percent discoloration, and brown

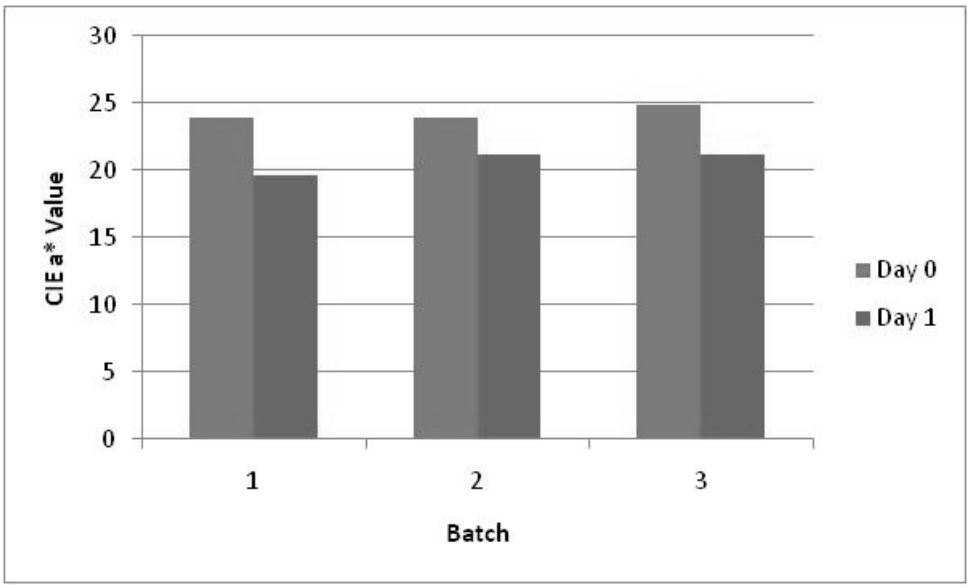
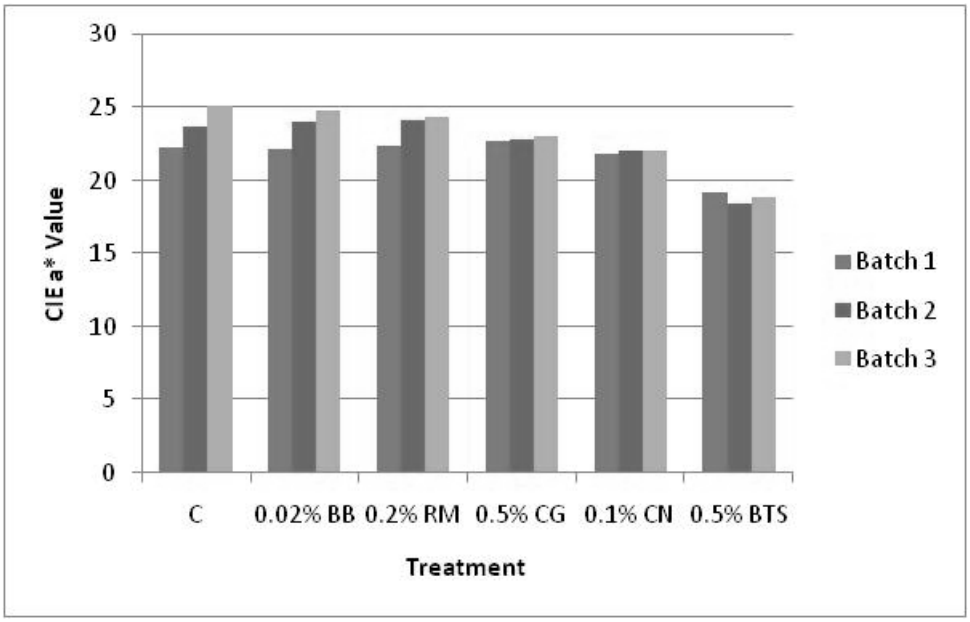
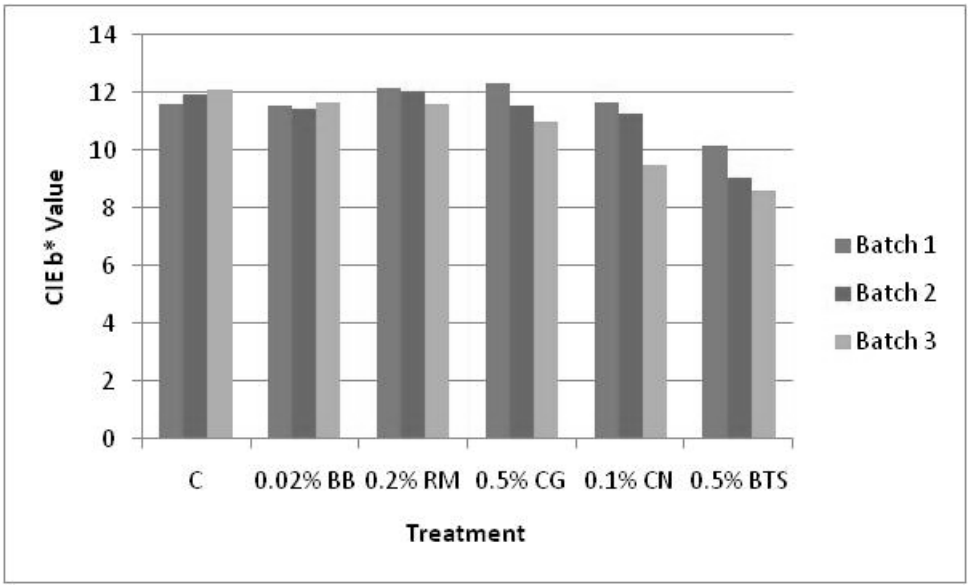


Figure 16 – Study 2 least squares means for batch by storage day interaction for CIE a* values of raw ground beef patties.

P-value = 0.01 from Analysis of Variance Table
Root Mean Square Error = 1.597



(a)



(b)

Figure 17 – Study 2 least squares means for batch by treatment interaction for (a) CIE a* color space values (P=0.0058, RMSE=1.597), and (b) CIE b* color space values of raw ground beef patties (P=0.0342, RMSE=1.342) from Analysis of Variance Table. (C=control, BB=BHA/BHT, RM=Rosemary Extract, CG=Chardonnay grape seed, CN=Chestnut wood, BTS=Black Tannin Sorghum.)

discoloration were affected by treatment ($P<0.0001$, Table 6). Lean color scores were lowest (darkest) and percent discoloration and brown discoloration scores were highest for patties containing BTS. This agreed with subjective results from study 1. All subjective color measurements were affected by CN and CG treatments while control, BHA/BHT, and RM treated patties consistently gave similar results of little discoloration and bright cherry red lean coloring.

Day effects existed ($P<0.0001$) for percent discoloration and brown discoloration as expected. With storage time, brown discoloration became darker and percent discoloration increased. This can be attributed to metmyoglobin formation over time (Pierson *et al.,* 1970).

Batch was significant only for lean color measurements (Table 6). Lean color differed by batch ($P<0.0001$). Batch by storage day interactions were also significant for lean color evaluations ($P= 0.0064$, Figure 18). Lean color scores were higher on day 1 for batches 2 and 3 indicating lightening of the lean, but they were higher on day 0 for batch 1.

Treatment by day interactions were significant for all three subjective color measurements and followed similar trend to those interactions in study 1 (Figure 19). Lean color scores (Figure 19(a)) were lowest across all storage days for BTS ($P=0.0144$). It was probable that the very dark nature of this sorghum treatment influenced the brightness of the patty surface. Lean color scores for BHA/BHT and CG treated patties decreased from day 0 to day 1, control patties maintained their lean color across storage, and CN and BTS treated patties increased in lean color scores. BTS

Table 6. Study 2 least squares means for raw lean color, percent discoloration, and brown color.

Effect	Lean Color	Pdis	BrDis
RMSE[b]	0.365	2.356	0.350
Treatment[a]	<0.0001	<0.0001	<0.0001
Control	5.22[de]	0.56[c]	0.11[c]
0.02% BHA/BHT	5.25[de]	0.00[c]	0.00[c]
0.20% Rosemary Extract	5.42[e]	0.83[c]	0.19[cd]
0.5% Chardonnay Grapeseed	4.97[d]	1.39[c]	0.42[d]
0.1% Chestnut	5.06[d]	1.67[c]	0.47[d]
0.5% Black Tannin Sorghum	3.83[c]	12.50[d]	1.67[e]
Storage Day[a]	0.59	<0.0001	<0.0001
0	4.94	0.00[c]	0.00[c]
1	4.98	5.65[d]	0.95[d]
Batch[a]	<0.0001	0.42	0.12
1	5.57[e]	2.64	0.43
2	5.06[d]	2.50	0.40
3	4.25[c]	3.33	0.60

[a]*P*-value from analysis of variance tables for each main effect.
[b]RMSE = Root mean square error from Analysis of Variance tables.
[c-f]Mean values within a column and main effect followed by the same letter are not significantly different ($P > 0.05$).
Storage at 4°C over 1 day.

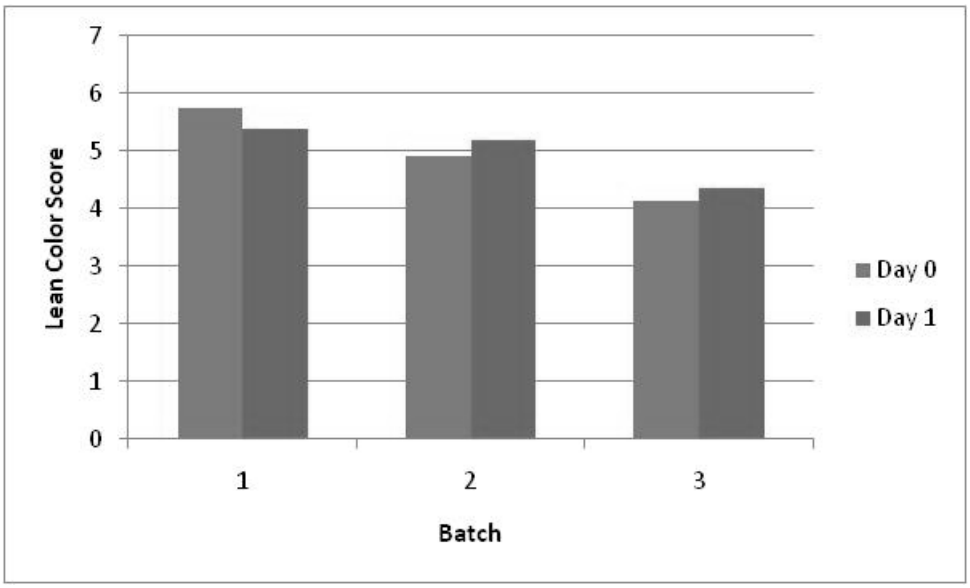
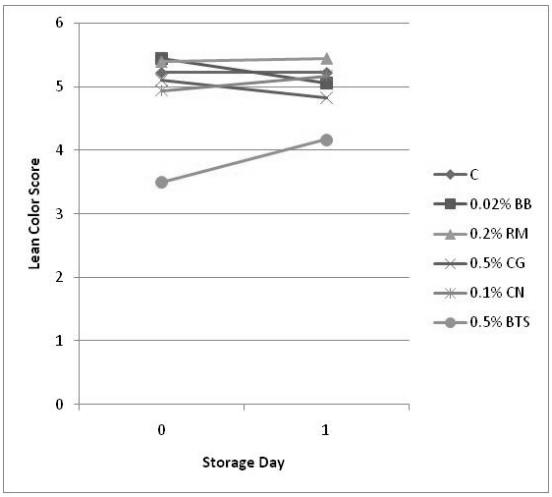
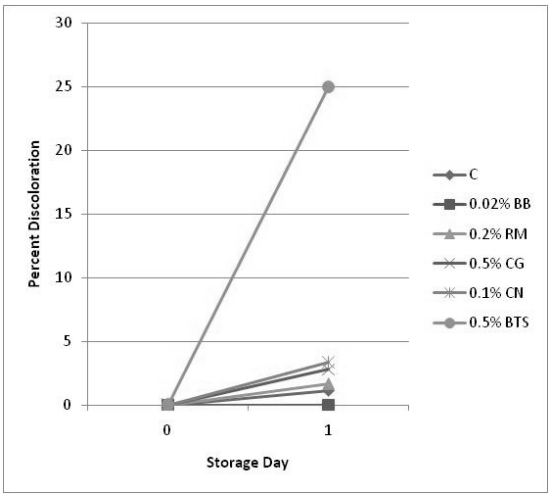


Figure 18 – Study 2 least squares means for batch by storage day interaction for lean color scores of raw ground beef patties.

P-value = 0.0064 from Analysis of Variance Table
Root Mean Square Error = 0.365



(a)



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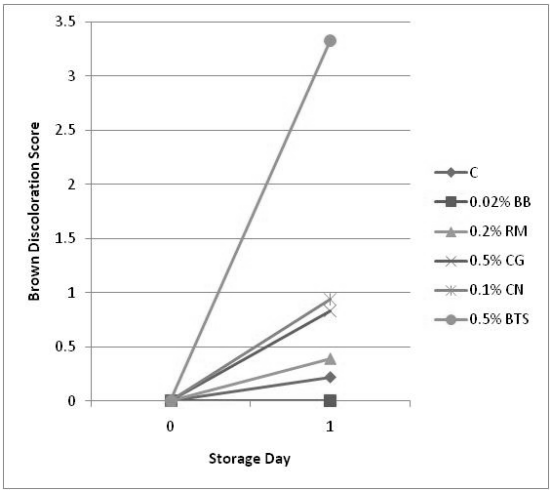

(c)

Figure 19 – Study 2 least squares means for treatment by storage day interaction for subjective color evaluation (a) lean color scores (P<0.0001, RMSE=0.365), (b) percent discoloration (P<0.0001, RMSE=2.356), and (c) brown discoloration of raw ground beef patties (P<0.0001, RMSE=0.350) from Analysis of Variance Table. (C=control, BB=BHA/BHT, RM=Rosemary Extract, CG=Chardonnay grape seed, CN=Chestnut wood, BTS=Black Tannin Sorghum.)

treated patties showed the greatest increase in percent discoloration ($P<0.0001$, Figure 19(b)) and brown discoloration ($P<0.0001$, Figure 19(c)) over the 2 storage days. BHA/BHT treated patties did not discolor from day 0 to day 1. There was a high correlation ($r=0.90$) for all treatments between percent discoloration increase and the brown color of the discoloration; the more discoloration, the darker brown the discoloration was perceived.

Consumer Sensory Evaluation

The purpose of the consumer sensory study was to determine if treatment addition affected consumer acceptability compared to control patties, and patties containing BHA/BHT and RM. The objective was to determine if the treatments imparted any unusual or identifiable flavor or texture to the ground beef. It was not the intention of this study to determine if the consumers could pick out which samples were most oxidized and which had the most lipid oxidation inhibition based on warmed over flavor (WOF) detection. WOF develops from degradation of lipids most often brought about by the storage and reheating of pre-cooked meat products and is often described as "cardboard-like", "painty", or "rancid" (Yang, Brewster, Beilken, Lanari, Taylor, & Tume, 2002; Mielche & Bertelsen, 1994). Patties were vacuum packaged and stored for no longer than 24 hrs to minimize the effects of WOF on consumer ability to evaluate flavor and texture differences between samples caused by treatment addition.

Frequency distributions for consumer demographic information were reported by category as a percentage of the total sample population (Table 7). Approximately 64% of the consumer panelists were female, and about 36% were male. The majority of the

Table 7. Study 2 consumer demographic information.

Item	Category	Percentage of Respondents	Number of Respondents
Gender	Female	63.8	60
	Male	36.2	34
Age	<20 years	29.8	28
	20-29 years	66.0	62
	30-39 years	1.1	1
	40-49 years	0.0	0
	50-59 years	2.1	2
	>60 years	1.1	1
Total Household Income per year	<$20,000	85.1	80
	$20,000-$29,999	6.4	6
	$30,000-$39,999	2.1	2
	$40,000-$49,999	1.1	1
	$50,000-$59,999	0.0	0
	>$60,000	4.3	4
Household Occupancy	1 person	19.1	18
	2 people	30.9	29
	3 people	19.1	18
	4 people	20.2	19
	5 people	7.4	7
	6 or more people	3.2	3
Ethnic Background	White/Caucasian	72.3	68
	Black/African-American	6.4	6
	Hispanic/Latino	14.9	14
	American Indian	0.0	0
	Asian or Pacific Islander	4.3	4
Employment Status	Not Employed	7.4	7
	Part-Time	8.5	8
	Full-Time	8.5	8
	Student	75.5	71

consumer panelists (66%) were between the ages of 20 and 29 followed in population by consumers under the age of 20 (~30%). Because of the young age of the majority of the consumer panelists and the fact that they were mostly students, approximately 85% reported a total household income per year of less than $20,000. Almost 31% of the consumer panelists had a household occupancy of 2 people. The remaining consumers had a total of 1, 3, or 4 people in their residence were relatively equal (19.1, 19.1, and 20.2%, respectively). Consumer panelists involved in this study were predominately of a Caucasian background (~72%) followed in population by those from a Hispanic or Latino ethnicity (~15%). College students were the target demographic for this sensory study, which explained the nearly 76% student employment status. The number of consumers claiming to be non-employed, part-time, or full-time employees were almost equal in population (7.4, 8.5, and 8.5%, respectively).

Table 8 showed that treatments did not play a significant role in consumer perception of tenderness, flavor intensity or juiciness. However, overall like (P=0.0002, Figure 20(a)), flavor (P=0.0001, Figure 20(b)), tenderness level (P=0.0005, Figure 20(c)), and ground beef-like bite (P=0.0002, Figure 20(d)) were affected by treatment. The higher the overall like score, the more the consumer favored the sample. Patties treated with CN gave the highest overall like scores with BTS and BHA/BHT treated samples similar in acceptance. RM treated patties had the lowest overall like ratings. Patties containing CN were highest in flavor. BHA/BHT and CG treated patties had the next highest flavor scores while samples containing RM were rated lowest in flavor like.

Table 8. Study 2 least squares means for consumer analysis.

Effect	Overall Like	Flavor	Tenderness	Tenderness Level	Ground Beef Bite	Flavor Intensity	Juciness
RMSE	1.847	1.972	1.635	1.585	1.728	1.909	1.815
Treatment[a]	0.0002	0.0001	0.10	0.0005	0.0002	0.27	0.15
Control	5.45[cd]	5.47[d]	6.04	6.19[d]	6.16[d]	4.95	5.80
0.02% BHA/BHT	5.76[de]	5.48[de]	6.33	6.46[d]	6.60[d]	5.09	6.03
0.20% Rosemary Extract	4.93[c]	4.51[c]	6.10	6.30[d]	5.58[c]	5.54	5.65
0.5% Chardonnay Grapeseed	5.61[d]	5.47[de]	5.71	5.56[c]	5.80[cd]	5.06	5.41
0.1% Chestnut	6.32[e]	6.09[e]	6.41	6.36[d]	6.58[d]	5.42	6.09
0.5% Black Tannin Sorghum	5.89[de]	5.45[d]	6.11	6.39[d]	6.44[d]	5.14	5.99
Batch[a]	0.05	0.12	0.004	0.60	0.02	0.04	0.09
1	5.78	5.30	6.10[cd]	6.19	6.21[cd]	4.91[c]	5.95
2	5.87	5.66	6.39[d]	6.30	6.42[d]	5.44[d]	5.93
3	5.43	5.28	5.86[c]	6.14	5.95[c]	5.25[cd]	5.60

[a]*P*-value from Analysis of Variance for each main effect.
[c-e]Mean values within a column and main effect followed by the same letter are not significantly different (P > 0.05).
[b]RMSE = Root mean square error from Analysis of Variance table

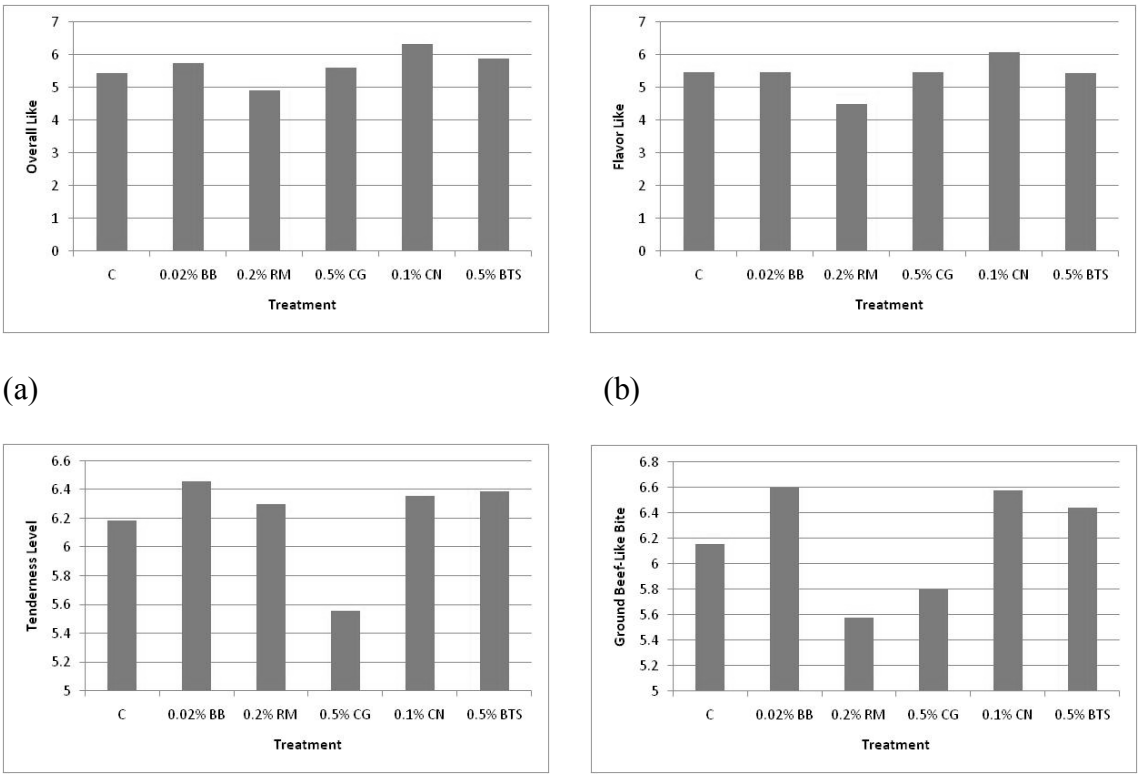

Figure 20 – Study 2 least squares means for consumer sensory evaluation of (a) overall like (P=0.0002, RMSE=1.847), (b) flavor like (P=0.0001, RMSE=1.972), (c) tenderness level (P=0.0005, RMSE=1.585), and (d) ground beef-like bite of pre-cooked ground beef patties (P=0.0002, RMSE=1.728) from Analysis of Variance Table.
(C=control, BB=BHA/BHT, RM=Rosemary Extract, CG=Chardonnay grape seed, CN=Chestnut wood, BTS=Black Tannin Sorghum.)

CG treated patties were less tender than other patties. Samples containing CG had small, chewy, and crunchy pieces in the meat, which most likely resulted in low tenderness level scores. RM and CG treated patties scored the lowest in terms of ground beef-like bite, while all other treatments were similar.

Batch effects were significant for consumer perception of overall like (P=0.05), tenderness (P=0.004), ground beef-like bite (P=0.02), and flavor intensity (P=0.04, Table 8). As different consumer populations tested each batch, variations of consumers were confounded with batch effects. As batch effects were reported for color and pH effects, consumer sensory attribute variation is not surprising.

The consumer sensory ballot contained open-ended questions that accompanied the categorical questions. The categorical questions regarding overall like/dislike, flavor like/dislike, and flavor intensity were followed by a section for the consumer panelist to comment on what they liked or disliked about the attribute. The open-ended responses were tallied by treatment and grouped according to similar comments (Table 9). One of the more frequent answers to these open-ended questions was no comment. Four other responses were popular with the consumer panelists and they included comments about the samples being bland and having no flavor, being overall good or bad, having either nothing that was liked about the sample or nothing that was disliked, and comments on flavor intensity. Some panelists liked the samples bland in flavor, but the majority of consumers commented that the lack of flavor was negative. The samples were intentionally unseasoned. When consumers commented on their overall like or dislike of the flavor of a sample in general, there were always more comments for like. CN and

Table 9. Study 2 written consumer responses and the frequency of these responses to the questions: "What did you LIKE about the FLAVOR of this sample?" and "What did you DISLIKE about the FLAVOR of this sample?".

Consumer Response Category	Control		BHA/BHT		Rosemary		Chestnut		Chardonnay grape		Black Tannin Sorghum	
	Like	Dislike	Like	Dislike	Like	Dislike	Like	Dislike	Like	Dislike	Like	Dislike
Bland/No Flavor	5	25	2	16	5	14	5	24	10	22	.	36
Overall (Good/Bad)	11	6	12	5	16	11	17	6	14	6	17	.
Juicy/Moist/Dry	5	1	5	1	3	1	4	4	5	1	6	1
Nothing	11	12	10	10	16	5	5	10	8	7	10	13
No Comment	26	18	23	28	29	17	16	26	18	24	17	25
Animal-Like	.	1	1	.	.	.	.	.	.	1	.	.
Ground Beef/Meat	4	.	4	2	5	3	9	0	3	1	1	.
Subtle/Not overwhelming/intensity	13	2	13	13	14	11	17	15	15	14	23	2
Aftertaste	1	9	2	4	1	4	2	4	2	4	4	2
Beefy	6	.	8	3	5	1	9	1	7	1	14	.
Turkey	.	1	1	.	.	.	.	.	.	.	.	.
Normal/Typical	7	1	7	.	1	2	5	.	8	1	4	1
Beef Fat/Lean	1	4	1	.	1	1	3	.	.	1	3	1
Fresh	.	.	3	.	.	.	.	.	.	.	.	.
Natural	1	.	2	.	1	1	1	.	1	.	3	.
Grill/Char/Smokey	1	.	3	.	.	.	4	.	2	.	.	.
Salty	1	.	1	1	2	.	1	.	2	2	.	.
Bloody/Metallic	.	5	.	5	.	3	.	3	.	6	.	3
Smell	.	.	.	1	.	1	.	.	.	1	.	.
Off Flavor	.	4	.	3	.	7	.	2	.	3	.	.
Raw	.	1	.	1	.	1	.	1	.	.	.	.
Sticky	.	1	.	1	.	1	.	.	.	.	.	.
Greasy	1	2	.	3	.	2	.	2	.	.	.	2
Sweet	2	.	.	.	1	.	2	.	.	.	1	.
Pepper/Seasoned	1	.	.	.	1	.	1	.	2	1	1	.
Consistency	.	.	.	.	1	.	1	1	2	.	1	1
Reheated/Old/Cardboard/Sour/Rancid	.	8	.	1	.	6	.	.	.	.	.	2
Nutty	.	.	.	.	.	.	1	.	1	.	.	.
Dog Food	.	.	.	.	.	3	.	.	.	.	.	.
Other (Bitter, Plastic, Savory, Quality)	1	.	1	.	.	.	.	.	.	.	1	1

BTS treated patties had the most overall like comments (17 comments each). Patties containing CN had 6 overall dislike comments, while BTS patties had none. CN treated samples again seemed to be most favored when analyzing the "nothing" comments. When a consumer indicated that there was "nothing" they like about the flavor of a sample, the sample was not preferred. Patties containing CN had the fewest of these comments (5 comments) while RM treated samples had the most (16 comments); these comments were similar to data presented in Table 8 and Figure 20. Of the comments regarding the flavor intensity being subtle or not overwhelming, samples containing BTS were most liked.

Out of all the consumer comments pertaining to the juiciness or dryness of a sample, CN treated patties had the most dry-dislike remarks (4 comments) with other treatments receiving one dry comment. CN treated patties also had a high number of comments, compared to other samples, for ground beef-like or meaty flavor like. The control samples were most criticized for having an unpleasant aftertaste. Consumers liked that the BHA/BHT (8 comments), CN (9 comments), and BTS (14 comments) treated samples had a "beefy" flavor. RM (7 comments) and control (4 comments) patties had the most negative comments that referred to an "off flavor", and the same treatments had the highest number of comments about reheated, old, cardboard, sour, and/or rancid flavors.

The categorical questions regarding overall tenderness like/dislike, level of tenderness, and ground beef-like bite were followed by a section for the consumer panelist to comment on what they liked or disliked about the texture of the sample they

were evaluating. The open-ended texture responses were tallied by treatment and grouped according to similar comments (Table 10). Again, one of the more frequent answers to the texture open-ended questions was to leave no comment at all. Many consumer panelists commented on the samples being "tender" or "tough"; control samples received an equal number of tender comments as they did tough (14 comments). RM and BTS treated samples had the highest number of tender comments (16) and 9 tough comments. RM treated samples had a high number of negative "sticky" or "tacky" comments compared to the other samples (6 comments). There were a relatively high number of consumers that disliked the chewiness of samples containing no added ingredient, CN, or BTS (14, 13, and 11 comments, respectively). The highest number of consumer panelist comments (33) were made about the "grittiness" or "granular particles" present in samples containing CG. This treatment's negative impact on the texture of ground beef was probably avoidable if the flour had been ground to a smaller particle size.

The last question on the consumer sensory ballot for each sample asked for additional comments concerning the eating qualities of the sample that had not been addressed in previous questions. The open responses were tallied by treatment and grouped according to similar comments (Table 11). Like the other two questions that probed for consumer open response, most panelists did not comment. Of the responses gathered, more consumers said they would purchase or willingly consume ground beef that contained one of the natural plant based tannin treatments than those that would purchase or eat the control, BHA/BHT, or RM treated meat. Two consumers

Table 10. Study 2 written consumer responses and the frequency of these responses to the questions: "What did you LIKE about the TEXTURE of this sample?" and "What did you DISLIKE about the TEXTURE of this sample?".

Consumer Response Category	Control		BHA/BHT		Rosemary		Chestnut		Chardonnay grape		Black Tannin Sorghum	
	Like	Dislike	Like	Dislike	Like	Dislike	Like	Dislike	Like	Dislike	Like	Dislike
Look	1	.	1	.	4	1	3	1	1	3	.	.
No Comment	24	28	28	27	21	26	16	33	29	22	16	32
Juicy/Moist/Dry	5	7	7	7	5	6	6	4	4	8	9	7
Consistency	2	1	2	1	.	2	4	1	.	.	1	1
Tender/Tough	14	14	13	3	16	9	10	8	13	6	16	9
Connective Tissue/Grissle	.	2	2	1	1	2	.	2	.	3	.	.
Smooth/Rough	5	2	3	5	5	2	7	1	4	3	7	1
Nothing	3	10	3	16	3	11	3	11	7	11	4	17
Overall (Good/Bad)	9	4	7	3	12	2	13	1	12	.	10	5
Normal/Typical	10	4	9	2	4	.	14	.	8	.	12	.
Melt in Mouth	.	.	3	.	.	.	.	.	.	.	.	.
Particle Size/Definition	2	1	2	.	1	1	.	.	1	.	.	.
Mouth Coating/Feel	.	1	3	.	2	.	.	.	.	.	.	.
Held Together/Cohesive/Crumbly	2	1	4	3	2	2	2	4	2	4	2	.
Sticky/Tacky	1	4	1	2	.	6	.	3	.	1	.	2
Chewiness	6	14	9	9	8	9	9	13	9	7	8	11
Soft	7	4	3	1	6	2	1	1	1	1	5	4
Ground Beef Like	3	.	2	.	.	.	.	.	3	.	3	2
Thick	.	.	1	.	1	.	.	1	.	.	1	1
Rubbery	.	4	.	5	.	.	1	3	.	.	.	1
Raw	.	3	.	1	.	1	.	1	.	.	.	.
Density	2	1	.	1	1	3	5	1	3	1	2	.
Coarse/Chunky	.	2	.	1	1	4	.	1	.	2	2	2
Gritty/Granular	1	3	.	4	1	4	1	3	.	33	5	6
Greasy	.	.	.	3	1	3	1	6	1	1	1	3
Spongey	.	1	.	1	.	.	.	.	.	1	.	.
Fat/Lean	1	1	.	.	.	.	.	.	.	.	3	1
Off/Odd	.	.	.	.	.	2	.	1	.	.	.	1
Slimy	.	.	.	.	.	2	.	.	1	.	.	1
Firm	1	1	.	.	2	.	2	.	.	.	.	.
Other (Turkey, Pasta-Like, Over Cooked, Waxy)	.	2	.	.	.	1	.	.	.	1	.	.

Table 11. Study 2 written consumer responses and the frequency of these responses to the comment: "Please make any additional comments concerning the eating qualities of this sample that has not been covered in the questions above.”.

Consumer Response Category	Control	BHA/BHT	Rosemary	Chestnut	Chardonnay	Black Tannin Sorghum
Pleasing Appearance	2	2	.	4	4	3
Unpleasant Appearance	7	3	3	1	1	1
No Comment	59	61	60	61	58	66
Would buy/Would eat again	1	1	1	2	2	3
Dry	.	3	2	3	2	2
Juicy	3	1	1	3	4	.
Pleasant Smell	2	1	.	1	.	1
Unpleasant Smell	.	3	1	.	1	.
Overall Acceptable	7	1	4	6	6	3
Overall Unacceptable	4	2	2	1	4	3
Raw/Pink Appearance	2	2	1	1	.	1
Visible Black Specks	.	.	.	.	.	2
Gritty	.	.	1	.	5	.

commented on visible black specks in the samples containing the BTS treatment, and this was consistent with speck data from study 1. Visible specks would most likely be eliminated by further processing the sorghum bran to a smaller particle size. Five consumers mentioned the grittiness of the CG samples to accompany the 33 consumers that brought up the same attribute and were discussed previously.

SUMMARY

Study 1. Color and TBARS Values

Results from study 1 showed that antioxidant addition to pre-cooked ground beef patties reduced TBARS values after 0, 1, 3, and 5 days of aerobic storage compared to control patties, and all treatments except 0.25% white sorghum bran reduced TBARS values over time compared 0.2% rosemary extract. Four treatments including 0.5% black tannin sorghum bran, 0.5% Chardonnay grape seed flour, 0.25% chestnut wood powder, and 0.1% chestnut wood powder showed no significant increase in TBARS values over the 5 days of storage, indicating that these treatments were the most effective antioxidants used in this study. Sorghum bran treatments were more effective at inhibiting lipid oxidation at higher treatment levels. TBARS values were similar for ground beef containing 0.1% and 0.25% chestnut wood powder, indicating that the lower concentration had equally effective antioxidant capabilities.

Treatment did not affect raw pH, but storage day was an influence. There was a pH increase from day 0 through day 3, followed by a pH decrease on day 5. Solubilization over time of the natural tannin containing treatments most likely contributed to the pH decline, as almost all of the tannin ingredients themselves had a low pH.

Black sorghum bran and black tannin sorghum bran had the lowest CIE color space values resulting in a darker, less red, and less yellow raw ground beef patty upon

addition of these treatments. With storage, brightness, redness, and yellowness all decreased with the exception of a slight increase in yellow color on day 5 of storage.

A trained color panel found sorghum bran treatments to have darker lean color and more percent discoloration over time than other patties; this was even more evident in patties containing a higher level of sorghum bran. Brown discoloration was darker in patties containing black sorghum bran and black tannin sorghum bran. Chardonnay grape seed flour, black sorghum bran, black tannin sorghum bran, and tannin sorghum bran had high visible ingredient speck counts.

Study 2. Consumer Sensory Study

Results from study 2 were consistent with those from study 1 in terms of pre-cooked TBARS values and raw color. BHA/BHT, rosemary extract, Chardonnay grape seed flour, chestnut wood powder, and black tannin sorghum bran all reduced lipid oxidation over aerobic storage compared to the control. Chardonnay grape seed flour, chestnut wood powder, and black tannin sorghum were the most effective treatments at inhibiting lipid oxidation.

Raw patties with tannin treatments were darker, less red and less yellow compared to the control patties and patties with BHA/BHT or rosemary extract. Over the one day of storage raw patties became less red and yellow. A trained color panel found black tannin sorghum to darken the lean color of the raw patty surface, increase percent discoloration, and darken the brown color of the discoloration more than other treatments.

Chestnut wood powder treated samples were given the highest "overall like" scores by consumer panelists, followed by black tannin sorghum and BHA/BHT treated samples. Chestnut wood powder treated samples were also given the highest "flavor like" scores by consumer panelists, followed by BHA/BHT and Chardonnay grape seed flour. Samples containing Chardonnay grape seed flour were given the lowest "tenderness level" scores by consumers. Samples containing rosemary extract and Chardonnay grape seed flour were given the lowest "ground beef-like bite" scores by consumer panelists. After considering consumer comments, it was likely that Chardonnay grape seed scored low in "tenderness level" and "ground beef-like bite" because of the grittiness it added to the cooked patties. Grittiness may be attributed to too large a mill size during the grinding of the seed itself and may be accounted for in following research.

CONCLUSIONS

Data from this study indicated that the addition of high levels of tannin sorghum bran or black sorghum bran or low levels of black tannin sorghum are similar in their antioxidant capabilities to that of BHA/BHT, a synthetic antioxidant commonly used in the food industry. High levels of white sorghum have antioxidant properties comparable to rosemary extract, a natural antioxidant commonly used in the food industry, and low levels of tannin sorghum and black tannin sorghum have antioxidant properties that fall between those of the two current industry leaders. Black tannin sorghum or Chardonnay grape seed flour at high levels or chestnut wood powder at low levels in pre-cooked ground beef patties had antioxidant properties where lipid oxidation practically ceased over 5 days of aerobic storage. Since there was no difference in antioxidant effectiveness between the two levels of chestnut wood powder, it is likely that even lower levels could be as capable at inhibiting lipid oxidation.

The addition of black sorghum bran and black tannin sorghum bran to raw ground beef had the most negative effects on color compared to the other treatments including the control patties. Addition of tannin sorghum bran and chestnut wood powder also resulted in negative raw color effects. These treatments caused lower instrumental and subjective color scores and resulted in increased discoloration over storage. Visible ingredient speck counts were high in patties containing black sorghum bran, black tannin sorghum bran, tannin sorghum bran, and Chardonnay grape seed flour. Specks, and their possible effect on color, could be eliminated by reducing the

milling size of the bran or seed or by using isolated extracts of the antioxidant components of these sources.

Finer ground tannin powders would also likely benefit consumer acceptability of Chardonnay grape seed flour and black tannin sorghum bran. Consumer panelists commented in high numbers on the gritty texture of samples containing Chardonnay grape seed flour, and they also rated the tenderness level of these samples much lower than they rated all other samples. Consumer panelists also commented on visible black specks in cooked ground beef samples containing black tannin sorghum bran. Samples containing chestnut wood powder consistently scored highest across all consumer sensory questions related to overall like, flavor, tenderness, tenderness level, flavor intensity, ground beef-like bite, and juiciness. Further research is necessary to determine the lowest level of chestnut powder addition to maintain antioxidant effectiveness and consumer acceptability while limiting negative raw color effects, and to determine the results on color and consumer opinion after finer tannin powders or extracts are produced for Chardonnay grape seed flour and black tannin sorghum bran.

REFERENCES

Ahn, J., Grün, I. U., & Fernando, L. N. (2002). Antioxidant properties of natural plant extracts containing polyphenolic compounds in cooked ground beef. *Journal of Food Science, 67* (4), 1364-1369.

Amakura, Y., Okada, M., Tsuji, S., & Tonogai, Y. (2000). High performance liquid chromatographic determination with photodiode array detection of ellagic acid in fresh and processed fruits. *Journal of Chromatography, 896*, 87–93.

Amarowicz, R., Naczk, M., & Shahidi, F. (2000). Antioxidant activity of various fractions of non-tannin phenolics of canola hulls. *Journal of Agricultural and Food Chemistry, 48,* 2755-2759.

AMSA. (1991). *Guidelines for meat color evaluation.* Savoy, IL: American Meat Science Association.

AMSA. (1995). *Research guidelines for cookery, sensory evaluation and instrumental measurements of fresh meat.* Chicago: American Meat Science Association and National Live Stock and Meat Board.

Awika, J. M. (2000). *Sorghum phenols as antioxidants*. M.S. thesis, Texas A&M University, College Station.

Awika, J. M. (2003). *Antioxidant properties of sorghum*. Ph.D. diss., Texas A&M University, College Station.

Awika, J. M., Rooney, L. W., Wu, X., Prior, R. L., & Cisneros-Zevallos, L. (2003). Screening methods to measure antioxidant acitivity of sorghum (Sorghum

bicolor) and sorghum products. *Journal of Agricultural and Food Chemistry, 51*, 6657-6662.

Bianco, M. A., Handaji, A., & Savolainen, G. (1999). Quantitative analysis of ellagic acid in hardwood samples. *The Science of the Total Environment, 222* (1–2), 123–126.

Bors, W., Foo, L. Y., Hertkorn, N., Michel, C., & Stettmaier, K. (2001). Chemical studies of proanthocyanidins and hydrolyzable tannins. *Antioxidants and Redox Signaling, 3* (6), 995-1008.

Boskou, D. (2006). Sources of natural phenolic antioxidants. *Trends in Food Science and Technology, 17*, 505–512.

Carbonaro, M., Virgili, F., & Carnovale, E. (1996). Evidence for protein-tannin interaction in legumes: Implications in the antioxidants properties of faba bean tannins. *Technology, 29*, 743-750.

Carpenter, R., O'Grady, M. N., O' Callaghan, Y. C., O'Brien, N. M., & Kerry, J. P. (2007). Evaluation of the antioxidant potential of grape seed and bearberry extracts in raw and cooked pork. *Meat Science, 76*, 604-610.

Chimi, H., Cillard, J., Cillard, P., & Rahmani, M. (1991). Peroxyl and hydroxyl radical scavenging activity of some natural phenolic antioxidants. *Journal of the American Oil Chemists' Society, 68* (5), 307-312.

Chung, K., Wong, T. Y., Wei, C., Huang, Y., & Lin, Y. (1998). Tannins and human health: A review. *Critical Reviews in Food Science and Nutrition, 38* (6), 421-464.

Clifford, M. N. (2000). Anthocyanins – nature, occurrence and dietary burden. *Journal of the Science of Food and Agriculture, 80*, 1063–1072.

Cruzen, S. M. (2010). *Plant-based tannins as antioxidants in pre-cooked ground beef patties*. M.S. thesis, Texas A&M Univ., College Station.

Enser, M. (1987). What is lipid oxidation? *Food Science and Technology Today, 1*, 151-153.

Fennema, O. R., Damodaran, S., & Parkin, K. L. (2008). *Food chemistry* 4th Ed. Boca Raton, FL: CRC Press. Taylor & Francis Group.

Frankel, E. N. (1984). Recent advances in the chemistry of the rancidity of fats. In *Recent advances in the chemistry of meat*, In A. J. Bailey (Ed.), *The Royal Society of Chemistry, Special Publication, 47*, 87-118.

Fuleki, T., & Ricardo-da-Silva, J. M. (1997). Catechin and procyanidin composition of seeds of grape cultivars grown in Ontario. *Journal of Agricultural and Food Chemistry, 45*, 1156–1160.

Giddings, G. G. (1977). The basis of color in muscle foods. *Journal of Food Science, 42* (2), 288-294.

Godsalve, E.W., Davis, E.A., Gordon, J., & Davis, H.T. (1977). Water loss rates and temperature profiles of dry cooked bovine muscle. *Journal of Food Science, 42* (4), 1038–1045.

Gous, F. (1989). *Tannins and phenols in black sorghum*. Ph.D. Diss., Texas A&M Univ., College Station.

Hagerman, A. E., Riedl, K. M., Jones, A., Sovik, K. N., Ritchard, N. T., Hartzfeld, P. W., & Riechel, T. L. (1998). High molecular weight polyphenolics (tannins) as biological antioxidants. *Journal of Agricultural and Food Chemistry, 46*, 1887-1892.

Hahn, D. H., Rooney, L. W., & Earp, C. F. (1984). Tannins and phenols of sorghum. *Cereal Foods World, 29*, 776-779.

Hamilton, R. J., Kalu, C., Prisk, E., Padley, F. B., & Pierce, H. (1997). Chemistry of free radicals in lipids. *Food Chemistry, 60*, 193-199.

Hemphill, S. P. (2006). *Effect of sorghum bran addition on lipid oxidation and sensory properties of ground beef patties differing in fat levels*. M.S. thesis, Texas A&M University, College Station.

Husain, S. R., Cillard, J., & Cillard, P. (1987). Hydroxyl radical scavenging activity of flavonoids. *Phytochemistry, 26* (9), 2489-2491.

Jayathilakan, K., Sharma, G. K., Radhakrishna, K., & Bawa, A. S. (2007). Antioxidant potential of synthetic and natural antioxidants and its effect on warmed-over-flavour in different species of meat. *Food Chemistry, 105*, 908-916.

Jenschke, B. E. (2004). *Chemical, color and sensory attributes of sorghum bran enhanced beef patties in a high oxygen environment*. M.S. thesis, Texas A&M University, College Station.

Kakouri, A. & Nychas, G.J.E. (1994). Storage of poultry meat under modified atmospheres or vacuum packs: Possible role of microbial metabolites as indicators of spoilage. *Journal of Applied Bacteriology, 76*, 163-172.

Kanner, J. (1994). Oxidative processes in meat and meat products: Quality implications. *Meat Science, 36*, 169-189.

Lampire, O., Mila, V., Raminosoa, I., Herve du Phenoat, C., Faucheur, N., & Laprevote. O. (1998). Polyphenols isolated from the bark of Castanea sativa Mill. Chemical structures and autoassociation in honor of Prof. G.H. Neil Towers 75th birthday. *Phytochemistry, 49*, 623–631.

Lapidot, T., Harel, S., Akiri, B., Granit, R., & Kanner, J. (1999). pH-dependent froms of red wine anthocyanins as antioxidants. *Journal of Agricultural and Food Chemistry, 47*, 67-70.

Lau, D. W. & King, A. J. (2003). Pre- and post-mortem use of grape seed extract in dark poultry meat to inhibit development of thiobarbituric acid reactive substances. *Journal of Agricultural and Food Chemistry, 51*, 1602-1607.

Luchsinger, S. E., Kropf, D. H., García Zepeda, C. M., Hunt, M. C., Stroda, S. L., Marsden, J. L., & Kastner, C. L. (1997). Color and oxidative properties of irradiated ground beef patties. *Journal of Muscle Foods, 8*, 445-464.

Luther, M. W. (2006). *Inhibitory effect of selected spice and food seed extracts on lipid oxidation in fish oil and their antimicrobial and radical scavenging properties*. M.S. Thesis, University of Maryland, College Park.

Mendes de Vasconcelos, M., Do, C. B., Bennet, R. N., Rosa, E. A. S., & Cardoso, J. V. F. (2007). Primary and secondary metabolite composition of kernels from three cultivars of Portuguese chestnut (Castanea sativa Mill) at different stages of industrial transformation. *Journal of Agricultural and Food*

Chemistry, 55, 3508–3516.

Mielche, M. M., & Bertelsen, G. (1994). Approaches to the prevention of warmed-over flavour. *Trends in Food Science and Technology, 5*, 322-327.

Morrissey, P. A., Sheehy, K. G., Kerry, J. P., & Buckley, D. J. (1998). Lipid stability in meat and meat products. *Meat Science, 49*(S1), S73-S86.

Nip, W. K., & Burns, E. E. (1969). Pigment characterization in grain sorghum. I. Red varieties. *Cereal Chemistry, 46*, 490–495.

Nip, W. K., & Burns, E. E. (1971). Pigment characterization in grain sorghum. II. White varieties. *Cereal Chemistry, 48*, 74–80.

Packer, L. (1993). Health effects of nutritional antioxidants. *Free Radical Biology and Medicine, 15*, 685-686.

Parry Jr., J. W. (2006). *Value adding factors in cold-pressed edible seed oils and flours*. Ph.D. diss., University of Maryland, College Park.

Pearson, A. M., Love, J. D., & Shorland, F. B. (1977). "Warmed-over" flavor in meat, poultry, and fish. *Advances in Food Research, 23*, 1-74.

Pierson, M.D., Collins-Thompson, D.L., & Ordal, Z.J. (1970). Microbiological, sensory and pigment changes of aerobically and anaerobically packaged beef. *Food Technology, 24*, 1171-1175.

Pokorny, Jan. (2007). Are natural antioxidants better-and safer-than synthetic antioxidants? *European Journal of Science and Technology, 109*, 629-642.

Ragan, M. A., & Glombitza, K. (1986). Phlorotannins, brown algal polyphenols. *Progress in Phycological Research, 4*, 177-241.

Rhee, K. S. (1978). Minimization of further lipid peroxidation in the distillation of 2-thiobarbituric acid test of fish and meat. *Journal of Food Science, 43*, 1776-1778.

Robards, K., Prenzler, P. D., Tucker, G., Swatsitang, P., & Glover, W. (1999). Phenolic compounds and their role in oxidative processes in fruits. *Food Chemistry, 66*, 401–436.

Rooney, L. W., & Waniska, R. D. (2000). Sorghum food and industrial utilization. In C. W. Smith, & R. A. Frederiksen (Eds.), *Sorghum: Origin, history, technology, and production*, 1st ed. (pp. 689-729). New York: John Wiley and Sons.

Roth, D. M., McKeith, F. K., Brewer, M. S. (1999). Processing parameter effects on sensory and instrumental texture characteristics of reduced-fat ground beef patties. *Journal of Muscle Foods, 10,* 163-176.

Saint-Cricq de Gaulejac, N., Glories, Y., & Vivas, N. (1999). Free radical scavenging effect of anthocyanins in red wines. *Food Research International, 32*, 327-333.

Sanchez-Moreno, C., Jimenez-Escrig, A., & Saura-Calixto, F. (2000). Study of low-density lipoprotein oxidizability indexes to measure the antioxidant activity of dietary polyphenols. *Nutrition Research, 20*, 941-953.

Satue-Gracia, M. T., Heinonen, M., & Frankel, E. N. (1997). Anthocyanins as antioxidant on human low density lipoprotein and lecithin-liposome systems. *Journal of Agricultural and Food Chemistry, 45*, 3362-3367.

Sáyago-Ayerdi, S. G., Brenes, A., & Goñi, I. (2009). Effect of grape antioxidant dietary fiber on the lipid oxidation of raw and cooked chicken hamburgers. *Food Science and Technology, 42*, 971-976.

Scalbert, A. (1991). Antimicrobial properties of tannin. *Phytochemistry, 30*, 3875-3883.

Shahidi, F. (2000). Antioxidants in food and food antioxidants. *Nahrung, 4*, 158-163.

Shin, D. K. (2006). *Antioxidant, color and sensory properties of sorghum bran in pre-cooked ground beef patties varying in fat and iron content*. M.S. thesis, Texas A&M University, College Station.

Silva, E. M., Souza, J. N. S., Rogez, H., Rees, J. F., & Larondelle, Y. (2007). Antioxidant activities and polyphenolic contents of fifteen selected plant species from the Amazonian region. *Food Chemistry, 101*, 1012-1018.

Soong Y.Y., & Barlow, P. J. (2004). Antioxidant activity and phenolic content of selected fruit seeds. *Food Chemistry, 88*, 411-417.

Spanier, A. M., St Angelo, A. J., & Shaffer, G. P. (1992). Response of beef flavour to oxygen depletion and an antioxidant/chelator mixture. *Journal of Agricultural and Food Chemistry, 40,* 1656–1662.

Sweeney, J. G., & Iacobucci, G. A. (1981). Synthesis of anthocyanidins-III: Total synthesis of apigeninidin and luteolinidin chlorides. *Tetrahedron, 37*, 1481–1483.

Tarladgis, B. G., Watts, B. M., & Younathan, M. T. (1960). A distillation method for the quantitative determination of malonaldehyde in rancid foods. *The Journal of the American Oil Chemists' Society, 37*, 44-48.

Tims, M. J. & Watts, B. M. (1958). Protection of cooked meats with phosphates. *Food Technology, 12*, 240-243.

Vekiari, S. A., Gordon, M. H., Garcia-Macias, P., & Labrinea, H. (2007). Extraction and determination of ellagic acid content in chestnut bark and fruit. *Food Chemistry, 110*, 1007-1011

Wang, H., Cao, G., & Prior, R. L. (1997). Oxygen radical absorbing capacity of anthocyanins. *Journal of Agricultural and Food Chemistry, 45*, 304-309.

Wang, Z., Li, Q., Yang, C., Shao, W., He, N., Wang, Y., & Sun, D. (2007). Polyphenol contents in eight fruits and their antioxidant activities. *Journal of Asian Natural Products Research, 19*, 1040-1045.

Yang, A., Brewster, M. J., Beilken, S. L., Lanari, M. C., Taylor, D. G., & Tume, R. K. (2002). Warmed-over flavor and lipid stability of beef: Effects of prior nutrition. *Journal of Food Science, 67,* 3309-3313.

APPENDIX A

ANOVA TABLES

STUDY 1. COLOR AND TBARS VALUES

Table A-1. Study 1 ANOVA table for TBARS values, mg malonaldehyde/kg.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	14	1 2 3 4 5 6 7 8 9 10 11 12 13 14
Day	4	0 1 3 5

Number of Observations Read	336
Number of Observations Used	335

Dependent Variable: TBARS TBARS

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	83	585.9212664	7.0592924	18.75	<.0001
Error	251	94.4956756	0.3764768		
Corrected Total	334	680.4169420			

R-Square	Coeff Var	Root MSE	TBARS Mean
0.861121	40.03388	0.613577	1.532644

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	19.1962487	9.5981243	25.49	<.0001
Batch*Trt	26	26.0737215	1.0028354	2.66	<.0001
Trt	13	268.5163928	20.6551071	54.86	<.0001
Day	3	146.4995093	48.8331698	129.71	<.0001
Trt*Day	39	122.9033096	3.1513669	8.37	<.0001

Table A-2. Study 1 ANOVA table for pH values.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	14	1 2 3 4 5 6 7 8 9 10 11 12 13 14
Day	4	0 1 3 5

Number of Observations Read	336
Number of Observations Used	336

Dependent Variable: pH pH

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	18	2.77685139	0.15426952	33.83	<.0001
Error	317	1.44546683	0.00455983		
Corrected Total	335	4.22231822			

R-Square	Coeff Var	Root MSE	pH Mean
0.657660	1.175715	0.067527	5.743442

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	0.26585959	0.13292979	29.15	<.0001
Trt	13	0.04703905	0.00361839	0.79	0.6670
Day	3	2.46395274	0.82131758	180.12	<.0001

Table A-3. Study 1 ANOVA table for L* color space values.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	14	1 2 3 4 5 6 7 8 9 10 11 12 13 14
Day	4	0 1 3 5

Number of Observations Read	336
Number of Observations Used	336

Dependent Variable: L L

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	89	3252.471975	36.544629	23.88	<.0001
Error	246	376.524773	1.530589		
Corrected Total	335	3628.996748			

R-Square	Coeff Var	Root MSE	L Mean
0.896245	2.309643	1.237170	53.56540

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	1970.697472	985.348736	643.77	<.0001
Batch*Trt	26	92.504669	3.557872	2.32	0.0005
Batch*Day	6	243.916172	40.652695	26.56	<.0001
Trt	13	638.104380	49.084952	32.07	<.0001
Day	3	221.676395	73.892132	48.28	<.0001
Trt*Day	39	85.572885	2.194177	1.43	0.0551

Table A-4. Study 1 ANOVA table for a* color space values.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	14	1 2 3 4 5 6 7 8 9 10 11 12 13 14
Day	4	0 1 3 5

Number of Observations Read	336
Number of Observations Used	336

Dependent Variable: a a

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	89	7908.376223	88.858160	64.46	<.0001
Error	246	339.108145	1.378488		
Corrected Total	335	8247.484368			

R-Square	Coeff Var	Root MSE	a Mean
0.958883	7.164541	1.174090	16.38752

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	53.184232	26.592116	19.29	<.0001
Batch*Trt	26	75.013388	2.885130	2.09	0.0021
Batch*Day	6	75.280358	12.546726	9.10	<.0001
Trt	13	925.440234	71.187710	51.64	<.0001
Day	3	6535.571849	2178.523950	1580.37	<.0001
Trt*Day	39	243.886161	6.253491	4.54	<.0001

Table A-5. Study 1 ANOVA table for b* color space values.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	14	1 2 3 4 5 6 7 8 9 10 11 12 13 14
Day	4	0 1 3 5

Number of Observations Read	336
Number of Observations Used	336

Dependent Variable: b b

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	89	918.035948	10.315011	14.42	<.0001
Error	246	175.945103	0.715224		
Corrected Total	335	1093.981051			

R-Square	Coeff Var	Root MSE	b Mean
0.839170	7.335606	0.845709	11.52883

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	31.3405782	15.6702891	21.91	<.0001
Batch*Trt	26	18.6326187	0.7166392	1.00	0.4659
Batch*Day	6	95.7722051	15.9620342	22.32	<.0001
Trt	13	314.7140513	24.2087732	33.85	<.0001
Day	3	428.8482808	142.9494269	199.87	<.0001
Trt*Day	39	28.7282140	0.7366209	1.03	0.4285

Table A-6. Study 1 ANOVA table for cook yield values.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	14	1 2 3 4 5 6 7 8 9 10 11 12 13 14
Day	4	0 1 3 5

Number of Observations Read	336
Number of Observations Used	336

Dependent Variable: CookYield CookYield

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	89	5002.78130	56.21103	1.78	0.0003
Error	246	7747.12284	31.49237		
Corrected Total	335	12749.90413			

R-Square	Coeff Var	Root MSE	CookYield Mean
0.392378	7.977562	5.611806	70.34488

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	503.572179	251.786090	8.00	0.0004
Batch*Trt	26	1947.825523	74.916366	2.38	0.0003
Batch*Day	6	208.042492	34.673749	1.10	0.3623
Trt	13	460.964318	35.458794	1.13	0.3374
Day	3	102.539352	34.179784	1.09	0.3559
Trt*Day	39	1779.837432	45.636857	1.45	0.0499

Table A-7. Study 1 ANOVA table for lean color scores.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	14	1 2 3 4 5 6 7 8 9 10 11 12 13 14
Day	4	0 1 3 5

Number of Observations Read	336
Number of Observations Used	336

Dependent Variable: LeanColor LeanColor

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	89	698.7994378	7.8516791	10.74	<.0001
Error	246	179.9029431	0.7313128		
Corrected Total	335	878.7023810			

R-Square	Coeff Var	Root MSE	LeanColor Mean
0.795263	20.37848	0.855168	4.196429

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	11.5421627	5.7710813	7.89	0.0005
Batch*Trt	26	21.8212632	0.8392794	1.15	0.2883
Batch*Day	6	74.9836310	12.4972718	17.09	<.0001
Trt	13	243.1167328	18.7012871	25.57	<.0001
Day	3	175.6607143	58.5535714	80.07	<.0001
Trt*Day	39	171.6749339	4.4019214	6.02	<.0001

Table A-8. Study 1 ANOVA table for percent discoloration values.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	14	1 2 3 4 5 6 7 8 9 10 11 12 13 14
Day	4	0 1 3 5

Number of Observations Read	336
Number of Observations Used	336

Dependent Variable: Pdis Pdis

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	89	473155.4563	5316.3534	48.46	<.0001
Error	246	26984.9868	109.6951		
Corrected Total	335	500140.4431			

R-Square	Coeff Var	Root MSE	Pdis Mean
0.946045	28.69619	10.47354	36.49802

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	2000.8598	1000.4299	9.12	0.0002
Batch*Trt	26	7568.5847	291.0994	2.65	<.0001
Batch*Day	6	2352.0503	392.0084	3.57	0.0021
Trt	13	46271.6931	3559.3610	32.45	<.0001
Day	3	379879.9934	126626.6645	1154.35	<.0001
Trt*Day	39	35082.2751	899.5455	8.20	<.0001

Table A-9. Study 1 ANOVA table for brown color scores.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	14	1 2 3 4 5 6 7 8 9 10 11 12 13 14
Day	4	0 1 3 5

Number of Observations Read	336
Number of Observations Used	336

Dependent Variable: BrDis BrDis

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	89	908.3614418	10.2063083	45.60	<.0001
Error	246	55.0618386	0.2238286		
Corrected Total	335	963.4232804			

R-Square	Coeff Var	Root MSE	BrDis Mean
0.942848	22.03744	0.473105	2.146825

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	5.0641534	2.5320767	11.31	<.0001
Batch*Trt	26	10.8733466	0.4182056	1.87	0.0081
Batch*Day	6	13.3617725	2.2269621	9.95	<.0001
Trt	13	111.5482804	8.5806370	38.34	<.0001
Day	3	675.4021164	225.1340388	1005.83	<.0001
Trt*Day	39	92.1117725	2.3618403	10.55	<.0001

Table A-10. Study 1 ANOVA table for speck values.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	14	1 2 3 4 5 6 7 8 9 10 11 12 13 14
Day	4	0 1 3 5

Number of Observations Read	336
Number of Observations Used	336

Dependent Variable: Specks Specks

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	89	177712.8171	1996.7732	83.62	<.0001
Error	246	5873.9395	23.8778		
Corrected Total	335	183586.7566			

R-Square	Coeff Var	Root MSE	Specks Mean
0.968005	25.30092	4.886492	19.31349

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	1483.8102	741.9051	31.07	<.0001
Batch*Trt	26	1732.8125	66.6466	2.79	<.0001
Batch*Day	6	398.6045	66.4341	2.78	0.0123
Trt	13	172379.8909	13259.9916	555.33	<.0001
Day	3	110.6832	36.8944	1.55	0.2034
Trt*Day	39	1607.0159	41.2055	1.73	0.0073

APPENDIX B

ANOVA TABLES

STUDY 2. CONSUMER SENSORY STUDY

Table B-1. Study 2 ANOVA table for TBARS values, mg malonaldehyde/kg.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	6	1 2 3 4 5 6
Day	2	0 1

Number of Observations Read	72
Number of Observations Used	72

Dependent Variable: TBARS TBARS

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	25	33.59869783	1.34394791	24.22	<.0001
Error	46	2.55224605	0.05548361		
Corrected Total	71	36.15094388			

R-Square	Coeff Var	Root MSE	TBARS Mean
0.929400	22.52062	0.235550	1.045929

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	1.31608529	0.65804264	11.86	<.0001
Batch*Trt	10	0.87469618	0.08746962	1.58	0.1441
Trt	5	18.88361453	3.77672291	68.07	<.0001
Day	1	4.74577985	4.74577985	85.53	<.0001
Trt*Day	5	6.85302574	1.37060515	24.70	<.0001
Batch*Day	2	0.92549625	0.46274812	8.34	0.0008

Table B-2. Study 2 ANOVA table for pH values.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	6	1 2 3 4 5 6
Day	2	0 1

Number of Observations Read	72
Number of Observations Used	72

Dependent Variable: pH pH

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	25	0.69055050	0.02762202	23.51	<.0001
Error	46	0.05405409	0.00117509		
Corrected Total	71	0.74460459			

R-Square	Coeff Var	Root MSE	pH Mean
0.927406	0.592614	0.034280	5.784468

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	0.59335100	0.29667550	252.47	<.0001
Trt	5	0.00993121	0.00198624	1.69	0.1560
Day	1	0.02199171	0.02199171	18.71	<.0001
Batch*Trt	10	0.02494946	0.00249495	2.12	0.0416
Trt*Day	5	0.00614880	0.00122976	1.05	0.4021
Batch*Day	2	0.03417832	0.01708916	14.54	<.0001

Table B-3. Study 2 ANOVA table for L* color space values.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	6	1 2 3 4 5 6
Day	2	0 1

Number of Observations Read	216
Number of Observations Used	216

Dependent Variable: L L

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	25	1173.936014	46.957441	11.04	<.0001
Error	190	808.427196	4.254880		
Corrected Total	215	1982.363209			

R-Square	Coeff Var	Root MSE	L Mean
0.592190	3.722321	2.062736	55.41532

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	834.0851793	417.0425896	98.02	<.0001
Batch*Trt	10	14.8114605	1.4811460	0.35	0.9664
Batch*Day	2	9.8518544	4.9259272	1.16	0.3164
Trt	5	251.9882656	50.3976531	11.84	<.0001
Day	1	1.4814290	1.4814290	0.35	0.5559
Trt*Day	5	61.7178249	12.3435650	2.90	0.0151

Table B-4. Study 2 ANOVA table for a* color space values.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	6	1 2 3 4 5 6
Day	2	0 1

Number of Observations Read	216
Number of Observations Used	216

Dependent Variable: a a

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	25	1514.550517	60.582021	23.76	<.0001
Error	190	484.456766	2.549772		
Corrected Total	215	1999.007283			

R-Square	Coeff Var	Root MSE	a Mean
0.757651	7.104880	1.596801	22.47470

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	57.7266929	28.8633465	11.32	<.0001
Batch*Trt	10	66.0255801	6.6025580	2.59	0.0058
Batch*Day	2	24.0592506	12.0296253	4.72	0.0100
Trt	5	639.2029435	127.8405887	50.14	<.0001
Day	1	700.2142672	700.2142672	274.62	<.0001
Trt*Day	5	27.3217825	5.4643565	2.14	0.0621

Table B-5. Study 2 ANOVA table for b* color space values.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	6	1 2 3 4 5 6
Day	2	0 1

Number of Observations Read	216
Number of Observations Used	216

Dependent Variable: b b

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	25	353.3327513	14.1333101	7.85	<.0001
Error	190	341.9008884	1.7994784		
Corrected Total	215	695.2336396			

R-Square	Coeff Var	Root MSE	b Mean
0.508222	11.99092	1.341446	11.18719

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	25.1703336	12.5851668	6.99	0.0012
Batch*Trt	10	36.1862612	3.6186261	2.01	0.0342
Batch*Day	2	5.1271877	2.5635939	1.42	0.2432
Trt	5	187.6316821	37.5263364	20.85	<.0001
Day	1	89.7170158	89.7170158	49.86	<.0001
Trt*Day	5	9.5002708	1.9000542	1.06	0.3863

Table B-6. Study 2 ANOVA table for cook yield values.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	6	1 2 3 4 5 6
Day	3	0 1 CS

Number of Observations Read	360
Number of Observations Used	360

Dependent Variable: CookYield CookYield

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	33	1984.126028	60.125031	6.95	<.0001
Error	326	2819.561726	8.648962		
Corrected Total	359	4803.687754			

R-Square	Coeff Var	Root MSE	CookYield Mean
0.413042	4.057489	2.940912	72.48108

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	558.2291331	279.1145665	32.27	<.0001
Batch*Trt	10	256.5794064	25.6579406	2.97	0.0014
Batch*Day	4	6.1206459	1.5301615	0.18	0.9502
Trt*Day	10	124.3731207	12.4373121	1.44	0.1622
Trt	5	28.4489143	5.6897829	0.66	0.6557
Day	2	16.2667672	8.1333836	0.94	0.3915

Table B-7. Study 2 ANOVA table for lean color scores.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	6	1 2 3 4 5 6
Day	2	0 1

Number of Observations Read	72
Number of Observations Used	72

Dependent Variable: LeanColor LeanColor

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	25	45.63734568	1.82549383	13.71	<.0001
Error	46	6.12654321	0.13318572		
Corrected Total	71	51.76388889			

R-Square	Coeff Var	Root MSE	LeanColor Mean
0.881644	7.360259	0.364946	4.958333

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	21.23148148	10.61574074	79.71	<.0001
Batch*Trt	10	1.04629630	0.10462963	0.79	0.6423
Batch*Day	2	1.50308642	0.75154321	5.64	0.0064
Trt	5	19.68055556	3.93611111	29.55	<.0001
Day	1	0.03858025	0.03858025	0.29	0.5930
Trt*Day	5	2.13734568	0.42746914	3.21	0.0144

Table B-8. Study 2 ANOVA table for percent discoloration values.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	6	1 2 3 4 5 6
Day	2	0 1

Number of Observations Read	72
Number of Observations Used	72

Dependent Variable: Pdis Pdis

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	25	3359.413580	134.376543	24.22	<.0001
Error	46	255.246914	5.548846		
Corrected Total	71	3614.660494			

R-Square	Coeff Var	Root MSE	Pdis Mean
0.929386	83.41137	2.355599	2.824074

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	9.567901	4.783951	0.86	0.4290
Batch*Trt	10	27.469136	2.746914	0.50	0.8845
Batch*Day	2	9.567901	4.783951	0.86	0.4290
Trt	5	1369.290123	273.858025	49.35	<.0001
Day	1	574.228395	574.228395	103.49	<.0001
Trt*Day	5	1369.290123	273.858025	49.35	<.0001

Table B-9. Study 2 ANOVA table for brown color scores.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	6	1 2 3 4 5 6
Day	2	0 1

Number of Observations Read	72
Number of Observations Used	72

Dependent Variable: BrDis BrDis

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	25	62.77006173	2.51080247	20.49	<.0001
Error	46	5.63580247	0.12251744		
Corrected Total	71	68.40586420			

R-Square	Coeff Var	Root MSE	BrDis Mean
0.917612	73.40328	0.350025	0.476852

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	0.53086420	0.26543210	2.17	0.1261
Batch*Trt	10	0.69135802	0.06913580	0.56	0.8341
Batch*Day	2	0.53086420	0.26543210	2.17	0.1261
Trt	5	22.32253086	4.46450617	36.44	<.0001
Day	1	16.37191358	16.37191358	133.63	<.0001
Trt*Day	5	22.32253086	4.46450617	36.44	<.0001

Table B-10. Study 2 ANOVA table for consumer overall like scores.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	6	BB BTS C CG Ch RM
Order	6	1 2 3 4 5 6

Data for Analysis of Overall	
Number of Observations Read	564
Number of Observations Used	559

Dependent Variable: Overall Overall

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	22	237.764106	10.807459	3.17	<.0001
Error	536	1828.840545	3.412016		
Corrected Total	558	2066.604651			

R-Square	Coeff Var	Root MSE	Overall Mean
0.115051	32.82151	1.847164	5.627907

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	19.49944968	9.74972484	2.86	0.0583
Batch*Trt	10	20.66577042	2.06657704	0.61	0.8096
Order	5	78.76465092	15.75293018	4.62	0.0004
Trt	5	85.50599512	17.10119902	5.01	0.0002

Table B-11. Study 2 ANOVA table for consumer flavor like scores.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	6	BB BTS C CG Ch RM
Order	6	1 2 3 4 5 6

Data for Analysis of Flavor Tender TendLevel GBBite	
Number of Observations Read	564
Number of Observations Used	563

Dependent Variable: Flavor Flavor

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	22	245.331524	11.151433	2.87	<.0001
Error	540	2099.947339	3.888791		
Corrected Total	562	2345.278863			

R-Square	Coeff Var	Root MSE	Flavor Mean
0.104607	36.50895	1.972002	5.401421

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	16.3943044	8.1971522	2.11	0.1225
Batch*Trt	10	46.8486495	4.6848649	1.20	0.2849
Order	5	67.5688434	13.5137687	3.48	0.0042
Trt	5	100.0027019	20.0005404	5.14	0.0001

Table B-12. Study 2 ANOVA table for consumer flavor intensity scores.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	6	BB BTS C CG Ch RM
Order	6	1 2 3 4 5 6

Data for Analysis of FlavorInt	
Number of Observations Read	564
Number of Observations Used	561

Dependent Variable: FlavorInt FlavorInt

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	22	86.683402	3.940155	1.08	0.3623
Error	538	1959.648148	3.642469		
Corrected Total	560	2046.331551			

R-Square	Coeff Var	Root MSE	FlavorInt Mean
0.042360	36.60454	1.908525	5.213904

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	22.36459874	11.18229937	3.07	0.0472
Batch*Trt	10	19.07734256	1.90773426	0.52	0.8738
Order	5	16.54327955	3.30865591	0.91	0.4752
Trt	5	23.12266892	4.62453378	1.27	0.2756

Table B-13. Study 2 ANOVA table for consumer tenderness like scores.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	6	BB BTS C CG Ch RM
Order	6	1 2 3 4 5 6

Data for Analysis of Flavor Tender TendLevel GBBite	
Number of Observations Read	564
Number of Observations Used	563

Dependent Variable: Tender Tender

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	22	156.570409	7.116837	2.66	<.0001
Error	540	1444.164937	2.674380		
Corrected Total	562	1600.735346			

R-Square	Coeff Var	Root MSE	Tender Mean
0.097812	26.86617	1.635353	6.087034

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	28.69779379	14.34889690	5.37	0.0049
Batch*Trt	10	25.34896017	2.53489602	0.95	0.4886
Order	5	70.88703328	14.17740666	5.30	<.0001
Trt	5	24.17120748	4.83424150	1.81	0.1095

Table B-14. Study 2 ANOVA table for consumer level of tenderness scores.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	6	BB BTS C CG Ch RM
Order	6	1 2 3 4 5 6

Data for Analysis of Flavor Tender TendLevel GBBite	
Number of Observations Read	564
Number of Observations Used	563

Dependent Variable: TendLevel TendLevel

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	22	102.403337	4.654697	1.85	0.0108
Error	540	1356.513181	2.512061		
Corrected Total	562	1458.916519			

R-Square	Coeff Var	Root MSE	TendLevel Mean
0.070191	25.55344	1.584948	6.202487

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	2.48673166	1.24336583	0.49	0.6099
Batch*Trt	10	19.98781491	1.99878149	0.80	0.6330
Order	5	37.01144923	7.40228985	2.95	0.0123
Trt	5	42.33036220	8.46607244	3.37	0.0052

Table B-15. Study 2 ANOVA table for consumer ground beef-like bite scores.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	6	BB BTS C CG Ch RM
Order	6	1 2 3 4 5 6

Data for Analysis of Flavor Tender TendLevel GBBite	
Number of Observations Read	564
Number of Observations Used	563

Dependent Variable: GBBite GBBite

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	22	192.811717	8.764169	2.94	<.0001
Error	540	1612.154535	2.985471		
Corrected Total	562	1804.966252			

R-Square	Coeff Var	Root MSE	GBBite Mean
0.106823	28.03402	1.727852	6.163410

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	22.31519073	11.15759537	3.74	0.0244
Batch*Trt	10	22.99901171	2.29990117	0.77	0.6576
Order	5	51.59920857	10.31984171	3.46	0.0044
Trt	5	72.28359631	14.45671926	4.84	0.0002

Table B-16. Study 2 ANOVA table for consumer juiciness scores.

Class Level Information		
Class	Levels	Values
Batch	3	1 2 3
Trt	6	BB BTS C CG Ch RM
Order	6	1 2 3 4 5 6

Data for Analysis of Juicy	
Number of Observations Read	564
Number of Observations Used	562

Dependent Variable: Juicy Juicy

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	22	170.842129	7.765551	2.36	0.0005
Error	539	1774.625842	3.292441		
Corrected Total	561	1945.467972			

R-Square	Coeff Var	Root MSE	Juicy Mean
0.087815	31.30960	1.814509	5.795374

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Batch	2	15.86157762	7.93078881	2.41	0.0909
Batch*Trt	10	51.68685932	5.16868593	1.57	0.1120
Order	5	87.59733514	17.51946703	5.32	<.0001
Trt	5	26.44014427	5.28802885	1.61	0.1566

APPENDIX C

RAW DATA

STUDY 1. COLOR AND TBARS VALUES

TREATMENT CODES

1=Control
2=0.02% combined BHA/BHT
3=0.2% Rosemary
4=0.5% Chardonnay Grapeseed
5=0.1% Chestnut
6=0.25% Chestnut
7=0.25% Black Sorghum
8=0.5% Black Sorghum
9=0.25% Black Tannin Sorghum
10=0.5% Black Tannin Sorghum
11=0.25% Tannin Sorghum
12= 0.5% Tannin Sorghum
13=0.25% White Sorghum
14=0.5% White Sorghum

TBARS

Batch	Day	Order	Trt	Patty	SampleA	SlurryA	SampleB	SlurryB	AbsA1	AbsA2	AbsB1	AbsB2
1	0	1	1	A	30.02	30.01	30.03	30	0.111	0.12	0.1	0.1
1	0	2	1	B	29.99	30.01	29.98	30	0.135	0.122	0.14	0.12
2	0	3	1	B	29.99	30	29.99	30.02	0.129	0.122	0.13	0.13
2	0	8	1	A	29.98	30.01	29.99	30	0.152	0.158	0.16	0.16
3	0	11	1	B	29.98	30.02	29.98	30	0.192	0.192	0.19	0.19
3	0	18	1	A	30.02	30	29.98	30	0.298	0.311	0.31	0.31
1	1	4	1	B	30.01	30	29.99	30.01	0.177	0.188	0.18	0.18
1	1	17	1	A	29.99	30.02	30.02	30	0.322	0.32	0.34	0.34
2	1	5	1	A	29.99	30.02	30.01	30	0.186	0.196	0.3	0.22
2	1	14	1	B	30	30	30	30.01	0.161	0.169	0.15	0.14
3	1	11	1	B	30.02	30	30.02	30	0.463	0.463	0.49	0.43
3	1	22	1	A	29.99	30.02	30	30.03	0.458	0.512	0.42	0.39
1	3	10	1	A	30.02	30.03	30.03	30.01	0.386	0.391	0.44	0.45
1	3	15	1	B	30.01	29.99	30	30	0.379	0.378	0.41	0.41
2	3	1	1	B	29.99	30	29.98	30.02	0.793	0.788	0.88	0.85
2	3	20	1	A	30.01	30.02	30.02	29.98	0.459	0.459	0.52	0.49
3	3	8	1	B	29.99	30.02	30.01	29.99	0.828	0.817	0.93	0.89
3	3	19	1	A	29.99	30.01	30.02	29.98	0.799	0.832	0.87	0.91
1	5	10	1	A	30.02	30.01	29.99	29.99	0.875	0.994	1.07	1.06
1	5	22	1	B	30.01	30	29.98	30.03	0.714	0.732	0.77	0.79
2	5	11	1	B	30.01	30.02	30.02	30	0.988	0.966	0.94	0.95
2	5	13	1	A	29.98	30	29.98	30.01	0.092	0.094	0.09	0.09
3	5	22	1	B	29.98	30.01	29.98	29.99	0.901	0.841	0.77	0.74
3	5	25	1	A	30	30.01	29.99	30.02	0.954	0.961	1	1.04
1	0	27	2	A	30	29.99	30.03	30	0.048	0.046	0.05	0.05
1	0	28	2	B	30.03	30.03	30.01	30.02	0.045	0.043	0.05	0.04
2	0	18	2	A	29.97	30.01	30.03	29.99	0.098	0.107	0.11	0.1
2	0	27	2	B	29.97	30	29.99	30.03	0.111	0.108	0.11	0.11
3	0	4	2	B	29.98	30	30.02	29.99	0.081	0.083	0.08	0.08
3	0	22	2	A	30	30	30.02	30.01	0.085	0.096	0.07	0.07

1	1	1	2	A	30.02	29.98	30	29.99	0.096	0.108	0.1	0.1
1	1	25	2	B	30	29.98	30.03	29.99	0.106	0.103	0.11	0.12
2	1	24	2	A	29.99	29.99	29.99	29.99	0.178	0.181	0.13	0.12
2	1	27	2	B	29.99	30.01	30	30.01	0.072	0.129	0.08	0.08
3	1	5	2	A	30.01	29.99	29.98	29.98	0.155	0.148	0.15	0.15
3	1	28	2	B	30.03	30.02	30	30.02	0.211	0.213	0.22	0.23
1	3	1	2	A	29.98	29.97	30.01	30.03	0.131	0.132	0.14	0.14
1	3	17	2	B	30.02	29.98	29.99	29.99	0.174	0.163	0.17	0.17
2	3	4	2	A	30.01	29.98	29.98	29.99	0.156	0.151	0.19	0.19
2	3	22	2	B	30	30.02	30.01	30.01	0.222	0.229	0.2	0.19
3	3	4	2	B	30.02	30.03	29.99	29.99	0.31	0.333	0.22	0.22
3	3	12	2	A	30	30.02	30.02	30.01	0.242	0.226	0.23	0.22
1	5	17	2	A	29.99	30.01	29.99	30	0.192	0.206	0.2	0.2
1	5	20	2	A	29.98	30	30	29.99	0.223	0.225	0.27	0.3
2	5	7	2	A	29.99	29.99	30	30	0.181	0.183	0.19	0.19
2	5	21	2	B	30.02	30.01	30.02	30	0.143	0.122	0.14	0.12
3	5	15	2	B	30	30.03	30.03	30.03	0.23	0.226	0.24	0.22
3	5	28	2	A	30.01	29.98	29.99	30	0.28	0.36	0.25	0.25
1	0	13	3	A	30.02	30.03	30.02	30.03	0.055	0.054	0.06	0.06
1	0	14	3	B	30.02	30.01	30	30.01	0.067	0.054	0.06	0.06
2	0	6	3	B	30.03	30.02	30.03	30.01	0.102	0.102	0.1	0.1
2	0	12	3	A	29.99	29.99	30.03	30.01	0.105	0.105	0.11	0.11
3	0	21	3	B	30	30	30.01	30.01	0.1	0.1	0.11	0.11
3	0	25	3	A	29.99	30	30.01	29.99	0.101	0.087	0.07	0.1
1	1	2	3	B	30.01	30.02	30	29.98	0.136	0.15	0.14	0.15
1	1	12	3	A	30	29.99	29.99	30	0.142	0.146	0.14	0.15
2	1	18	3	B	30.01	30.02	29.98	30.02	0.155	0.161	0.17	0.17
2	1	26	3	A	29.99	29.99	30	29.98	0.153	0.162	0.15	0.15
3	1	16	3	B	29.99	30.01	30	30.02	0.271	0.246	0.22	0.22
3	1	18	3	A	30.02	30.01	30	30.01	0.257	0.255	0.28	0.29
1	3	13	3	A	30.01	29.98	30.01	30.01	0.287	0.277	0.09	0.35
1	3	24	3	B	29.99	30	29.99	30.01	0.332	0.324	0.33	0.32
2	3	13	3	A	30	30.01	30.01	30	0.407	0.39	0.41	0.38

2	3	26	3	B	29.98	30	30	30	0.373	0.369	0.29	0.3
3	3	6	3	B	30	30	30	29.99	0.458	0.442	0.45	0.44
3	3	25	3	A	29.99	30.01	30	30	0.336	0.324	0.31	0.32
1	5	7	3	B	30	30.02	30.03	30	0.57	0.546	0.61	0.6
1	5	18	3	A	30	30.02	29.99	29.99	0.526	0.514	0.44	0.43
2	5	2	3	A	30.01	29.99	30.01	30	0.412	0.401	0.4	0.4
2	5	3	3	B	30.01	29.99	30.02	29.99	0.438	0.447	0.51	0.51
3	5	3	3	A	29.99	30	30.02	30.02	0.633	0.67	0.7	0.7
3	5	10	3	B	29.98	30	30	30.02	0.59	0.636	0.66	0.61
1	0	7	4	A	30	30	30.01	30	0.046	0.046	0.05	0.04
1	0	8	4	B	30.03	30	30	30.01	0.045	0.047	0.05	0.04
2	0	1	4	B	29.97	30.03	29.99	29.98	0.092	0.094	0.1	0.09
2	0	7	4	A	30.01	30	30.01	30.03	0.09	0.09	0.09	0.09
3	0	9	4	B	30.03	30.03	29.97	30	0.077	0.077	0.08	0.08
3	0	13	4	A	30	30.03	30.03	29.99	0.076	0.077	0.08	0.08
1	1	15	4	A	30.03	30.01	30.03	29.98	0.043	0.042	0.05	0.04
1	1	27	4	B	30.01	29.98	29.99	30.02	0.041	0.045	0.04	0.04
2	1	1	4	A	30.02	30.01	30.02	29.99	0.103	0.109	0.11	0.11
2	1	20	4	B	30	29.99	29.99	29.99	0.059	0.067	0.08	0.08
3	1	9	4	A	30	30	30.01	30.03	0.077	0.075	0.09	0.08
3	1	26	4	B	30	29.98	30.03	29.97	0.074	0.075	0.08	0.07
1	3	18	4	B	30.02	29.98	29.98	30	0.045	0.04	0.04	0.04
1	3	28	4	A	30.03	30	30.01	29.98	0.049	0.054	0.05	0.05
2	3	11	4	A	30	29.99	30	30.02	0.078	0.072	0.1	0.1
2	3	24	4	B	29.98	29.99	29.98	29.99	0.115	0.114	0.11	0.11
3	3	16	4	A	30.03	30	29.99	29.97	0.091	0.095	0.1	0.09
3	3	18	4	B	29.99	29.98	30.02	29.99	0.084	0.09	0.09	0.09
1	5	1	4	A	29.99	29.99	30	30.01	0.056	0.049	0.05	0.05
1	5	23	4	B	29.97	29.99	29.99	30.02	0.05	0.043	0.05	0.06
2	5	17	4	B	30.01	30.01	30.01	29.98	0.107	0.094	0.1	0.11
2	5	24	4	A	30.02	30.02	29.98	29.98	0.088	0.089	0.07	0.08
3	5	6	4	B	29.99	30.02	30.02	30.01	0.088	0.081	0.08	0.09
3	5	19	4	A	30.01	30.02	29.99	30	0.084	0.085	0.11	0.11

1	0	5	5	A	29.99	30	30.03	30.03	0.03	0.038	0.04	0.03
1	0	6	5	B	30	30.01	30	30.02	0.04	0.038	0.04	0.03
2	0	9	5	A	29.99	29.98	30.01	30	0.089	0.087	0.09	0.09
2	0	19	5	A	30.01	29.98	29.97	29.99	0.089	0.088	0.09	0.11
3	0	15	5	B	30.03	29.99	29.99	29.98	0.062	0.064	0.06	0.06
3	0	24	5	A	30	30.02	29.98	30.01	0.064	0.067	0.06	0.06
1	1	21	5	B	29.99	30.02	30	30	0.024	0.042	0.04	0.04
1	1	24	5	A	29.99	30	30.02	29.99	0.028	0.028	0.03	0.02
2	1	13	5	B	30	29.99	30.01	30	0.132	0.139	0.16	0.15
2	1	21	5	A	30	30.01	30.01	30.02	0.147	0.147	0.14	0.13
3	1	6	5	A	30.02	29.98	29.98	30.02	0.054	0.052	0.06	0.06
3	1	24	5	B	30	30.02	30.03	30.01	0.072	0.069	0.07	0.07
1	3	8	5	B	29.98	30	30.02	30.01	0.035	0.032	0.04	0.03
1	3	11	5	A	30	29.98	30.02	30	0.036	0.029	0.03	0.03
2	3	14	5	B	30.02	30.02	30.03	29.99	0.105	0.106	0.11	0.09
2	3	16	5	A	29.99	30	30.01	30.02	0.091	0.086	0.1	0.09
3	3	9	5	B	30.01	30.01	30.03	30.02	0.082	0.072	0.07	0.08
3	3	13	5	A	29.99	30.01	29.99	30	0.067	0.072	0.08	0.07
1	5	3	5	B	29.99	30.02	30.02	30.02	0.041	0.041	0.04	0.04
1	5	16	5	A	30.02	29.99	30.01	30	0.038	0.036	0.04	0.04
2	5	6	5	A	29.99	30.02	30.01	30.02	0.083	0.086	0.08	0.09
2	5	27	5	B	29.98	29.99	30.01	29.99	0.164	0.187	0.13	0.12
3	5	9	5	A	29.99	29.99	30	30.01	0.073	0.07	0.07	0.07
3	5	24	5	B	29.99	29.99	30	29.99	0.074	0.071	0.06	0.06
1	0	11	6	A	30.03	30.03	30.03	30.03	0.038	0.045	0.04	0.03
1	0	12	6	B	30.02	30.02	30.02	30	0.036	0.034	0.03	0.04
2	0	5	6	A	29.98	30.02	29.99	30.01	0.09	0.099	0.09	0.09
2	0	11	6	B	30	30.02	30	29.99	0.084	0.086	0.1	0.1
3	0	2	6	B	30.02	30.01	30.02	30	0.093	0.088	0.08	0.08
3	0	27	6	A	29.98	30.02	29.99	29.99	0.066	0.075	0.06	0.07
1	1	6	6	A	29.99	30.02	30	30.02	0.031	0.033	0.03	0.03
1	1	14	6	B	30	30.02	29.99	30	0.047	0.035	0.04	0.05
2	1	6	6	B	30	29.99	29.99	30.01	0.09	0.094	0.15	0.12

2	1	22	6	A	29.99	29.98	30.02	29.98	0.133	0.127	0.11	0.14
3	1	14	6	A	30.02	30	30	30.01	0.067	0.062	0.08	0.06
3	1	17	6	B	30.02	30.01	30.02	30	0.068	0.064	0.07	0.06
1	3	20	6	B	29.98	30	29.98	30	0.032	0.023	0.03	0.03
1	3	21	6	A	30	30.01	29.98	29.98	0.015	0.023	0.02	0.02
2	3	15	6	B	30.02	30.02	30.01	29.99	0.136	0.095	0.1	0.1
2	3	21	6	A	30	30	29.99	30.01	0.109	0.088	0.1	0.09
3	3	14	6	A	29.99	30	30.01	30	0.074	0.073	0.09	0.08
3	3	21	6	B	30	30.01	30.01	29.99	0.085	0.087	0.07	0.09
1	5	2	6	B	29.99	30	29.99	29.99	0.037	0.034	0.04	0.04
1	5	24	6	A	29.98	30	29.98	29.98	0.031	0.035	0.03	0.03
2	5	12	6	B	29.99	30.02	30.01	29.99	0.102	0.097	0.12	0.13
2	5	28	6	A	30.01	29.99	29.98	30	.	.	.	.
3	5	8	6	B	30.02	30.01	30.02	29.99	0.072	0.067	0.07	0.07
3	5	20	6	A	29.98	30	30	30.01	0.069	0.078	0.07	0.07
1	0	17	7	A	30.01	29.98	29.98	29.98	0.047	0.048	0.04	0.04
1	0	18	7	B	30.02	30.02	29.98	29.97	0.043	0.042	0.04	0.04
2	0	23	7	A	30.02	30.01	29.98	29.99	0.134	0.139	0.13	0.12
2	0	25	7	B	30.01	30	30.01	30.01	0.103	0.113	0.12	0.12
3	0	1	7	B	30	30.02	29.97	29.98	0.097	0.08	0.08	0.08
3	0	26	7	A	30.01	30	30.02	30	0.098	0.102	0.08	0.09
1	1	5	7	B	30.01	30	30.02	29.99	0.105	0.12	0.11	0.13
1	1	23	7	A	30.03	30.01	30	29.99	0.087	0.107	0.09	0.1
2	1	2	7	A	29.99	30	30.02	29.99	0.101	0.096	0.11	0.12
2	1	15	7	B	30.01	30.01	30.02	30	0.084	0.086	0.07	0.07
3	1	19	7	B	30.01	30.01	30	30.02	0.157	0.16	0.22	0.21
3	1	27	7	A	30.02	29.98	30.01	30.01	0.218	0.227	0.19	0.21
1	3	12	7	B	30.03	30.01	29.98	30.02	0.02	0.21	0.19	0.2
1	3	23	7	A	30.02	29.99	30.01	30.01	0.276	0.288	0.3	0.3
2	3	9	7	B	30.01	30.01	30.01	30.01	0.214	0.22	0.25	0.25
2	3	17	7	A	30	29.99	29.98	29.99	0.331	0.321	0.34	0.33
3	3	23	7	A	29.98	30.01	29.99	30	0.445	0.476	0.41	0.42
3	3	26	7	B	30.02	30	30.02	30	0.329	0.373	0.36	0.32

1	5	12	7	B	30.02	30.01	30	30	0.25	0.25	0.27	0.29
1	5	25	7	A	30.02	30	29.97	29.98	0.26	0.271	0.35	0.34
2	5	1	7	A	30	30.01	30.02	29.99	0.25	0.249	0.23	0.25
2	5	25	7	B	29.99	29.98	30	30	0.351	0.333	0.27	0.28
3	5	5	7	B	29.99	30.01	29.98	29.99	0.399	0.41	0.39	0.39
3	5	17	7	A	30	30	29.97	29.99	0.331	0.334	0.43	0.39
1	0	15	8	A	30.03	30	30.01	29.99	0.041	0.034	0.04	0.04
1	0	16	8	B	29.98	30	29.99	29.97	0.039	0.038	0.04	0.04
2	0	15	8	B	30	30.02	29.98	29.98	0.085	0.082	0.09	0.09
2	0	17	8	B	30.02	30.01	30	30	0.097	0.107	0.09	0.09
3	0	5	8	A	29.98	29.99	30	30	0.074	0.072	0.08	0.08
3	0	10	8	B	30.01	30.01	29.98	29.97	0.075	0.067	0.07	0.08
3	0	28	8	B	29.99	30.02	30.02	30.02	0.081	0.079	0.09	0.09
1	1	8	8	B	30	29.98	30.02	29.98	0.072	0.061	0.04	0.06
1	1	13	8	A	29.99	30.02	30.03	30	0.047	0.047	0.05	0.04
1	1	26	8	A	30.03	30	30.03	30.02	0.042	0.042	0.05	0.04
2	1	12	8	B	30.02	30.01	30.01	29.98	0.155	0.143	0.15	0.15
2	1	28	8	A	30.02	30	30.02	29.98	0.343	0.35	0.48	0.48
3	1	3	8	B	29.99	30	29.99	29.98	0.098	0.094	0.08	0.09
3	1	4	8	A	30	30.01	30	30.02	0.107	0.103	0.08	0.08
1	3	7	8	B	30	29.99	29.98	30.01	0.082	0.079	0.08	0.08
1	3	9	8	A	30.03	30.03	29.99	30.03	0.082	0.081	0.09	0.09
2	3	10	8	B	29.98	29.98	29.98	30.02	0.132	0.127	0.12	0.11
2	3	28	8	A	30.01	29.99	29.98	30.02	0.117	0.126	0.11	0.12
3	3	5	8	B	30.01	30	30	30.01	0.544	0.544	0.57	0.55
3	3	24	8	A	30.02	29.98	29.99	29.99	0.144	0.143	0.17	0.17
1	5	6	8	B	30.02	30	29.98	30.02	0.111	0.114	0.11	0.12
1	5	9	8	A	30.01	30.01	29.99	30	0.113	0.122	0.11	0.11
2	5	9	8	B	29.99	30.02	29.98	30	0.153	0.143	0.12	0.12
2	5	23	8	A	29.99	29.98	30	30.02	0.096	0.112	0.1	0.1
3	5	18	8	A	30.01	30.03	30.03	29.99	0.165	0.174	0.17	0.19
3	5	27	8	B	30	30	30	30	0.184	0.166	0.16	0.19
1	0	9	9	A	30	30	30.01	30.02	0.046	0.055	0.04	0.05

1	0	10	9	B	30.01	30.01	30.02	30.03	0.048	0.043	0.05	0.05
2	0	10	9	B	30.02	30.02	30	30.02	0.098	0.101	0.1	0.08
2	0	26	9	A	30.03	30	30.03	29.99	0.126	0.112	0.12	0.11
3	0	17	9	A	30	29.99	30.01	29.98	0.098	0.096	0.09	0.09
1	1	11	9	A	29.99	29.99	29.98	30.01	0.11	0.112	0.12	0.11
1	1	22	9	B	30.01	30.01	29.99	29.98	0.128	0.133	0.13	0.14
2	1	7	9	A	30.02	30	30.02	29.99	0.095	0.096	0.13	0.1
2	1	25	9	B	30.02	29.98	30.01	29.98	0.098	0.091	0.1	0.09
3	1	1	9	A	30.01	30.01	29.99	29.99	0.195	0.221	0.19	0.17
3	1	7	9	B	30.01	29.98	29.99	29.99	0.144	0.161	0.14	0.13
1	3	16	9	B	30.02	30.01	30	30	0.247	0.218	0.24	0.23
1	3	25	9	A	30.01	30.01	30	30.01	0.255	0.252	0.25	0.24
2	3	5	9	A	29.99	30.02	30	29.98	0.227	0.228	0.25	0.26
2	3	25	9	B	29.99	30.01	30	30.01	0.316	0.31	0.28	0.28
3	3	2	9	B	29.98	30.01	30.01	30	0.284	0.272	0.36	0.31
3	3	10	9	A	30	30.02	30.01	30.01	0.163	0.192	0.16	0.17
1	5	11	9	B	30.02	30.02	30.01	30.02	0.226	0.219	0.24	0.24
1	5	28	9	A	30.02	30.01	30.01	29.99	0.275	0.264	0.29	0.3
2	5	5	9	B	30.02	30.02	30.02	30	0.279	0.278	0.27	0.28
2	5	14	9	A	30.01	29.99	29.99	30	0.355	0.343	0.35	0.35
3	5	1	9	A	30.01	30.02	29.99	29.98	0.398	0.388	0.45	0.42
3	5	11	9	B	29.99	29.98	30.01	30.03	0.284	0.264	0.31	0.33
1	0	19	10	A	29.98	30	30	30.02	0.036	0.032	0.04	0.03
1	0	20	10	B	30.01	29.97	30	29.99	0.031	0.044	0.03	0.03
2	0	16	10	A	29.99	29.99	30.03	30.01	0.092	0.09	0.08	0.09
2	0	24	10	B	30.03	29.97	30.01	29.98	0.094	0.116	0.1	0.11
3	0	12	10	B	30.01	30.02	29.97	30.01	0.076	0.075	0.08	0.08
3	0	16	10	A	29.98	30	30.01	30	0.081	0.075	0.07	0.06
1	1	18	10	B	29.99	30.02	30.02	30	0.05	0.066	0.05	0.05
2	1	11	10	A	30	30	30	29.99	0.184	0.186	0.15	0.16
2	1	23	10	B	30.01	30	29.98	29.98	0.136	0.142	0.13	0.12
3	1	8	10	B	29.98	30	29.99	30.01	0.092	0.095	0.1	0.1
3	1	15	10	A	30.01	30	29.99	30	0.088	0.089	0.11	0.1

1	3	3	10	A	29.98	30.03	30	30.03	0.078	0.081	0.08	0.08
1	3	4	10	B	29.98	30.03	30	30.03	0.08	0.082	0.08	0.08
2	3	6	10	A	30.02	30.02	30	29.98	0.147	0.155	0.15	0.15
2	3	12	10	B	30.01	29.99	30.01	29.98	0.144	0.134	0.17	0.16
3	3	1	10	A	30	30.01	30	29.99	0.246	0.267	0.22	0.23
3	3	11	10	B	30	30.02	29.98	29.99	0.152	0.139	0.13	0.13
1	5	13	10	A	30.03	29.98	29.99	30.02	0.096	0.11	0.1	0.11
1	5	19	10	B	29.98	30.02	30.02	29.98	0.059	0.063	0.06	0.08
2	5	4	10	B	29.99	30	30.02	29.99	0.124	0.124	0.13	0.13
2	5	10	10	A	29.99	30.01	30	30	0.153	0.146	0.13	0.13
3	5	4	10	A	30.02	30.01	29.99	30	0.164	0.181	0.18	0.17
3	5	21	10	B	29.99	30	30.02	30.01	0.157	0.169	0.16	0.15
1	0	3	11	A	30.01	30.02	30	30.02	0.05	0.048	0.05	0.05
1	0	4	11	B	30.03	30.03	30.01	30	0.051	0.06	0.05	0.05
2	0	14	11	B	29.98	29.98	30.01	30.01	0.098	0.107	0.1	0.11
2	0	20	11	A	30	30.02	29.98	29.97	0.109	0.104	0.11	0.12
3	0	8	11	B	29.98	29.99	30.01	30.01	0.091	0.094	0.09	0.1
3	0	23	11	A	30.02	30	29.99	30.02	0.078	0.078	0.07	0.08
1	1	10	11	B	30.01	29.99	30	29.98	0.131	0.123	0.14	0.13
1	1	20	11	A	30	30.02	29.98	30	0.141	0.15	0.14	0.14
2	1	8	11	B	30	30	30.01	29.99	0.081	0.076	0.1	0.08
2	1	9	11	A	30	29.99	30	29.99	0.091	0.085	0.1	0.09
3	1	10	11	B	30.01	30	30.01	30.01	0.18	0.176	0.18	0.18
3	1	13	11	A	30.01	29.98	30.01	30.01	0.174	0.187	0.18	0.19
1	3	19	11	B	29.99	29.98	29.98	30	0.241	0.236	0.27	0.27
1	3	26	11	A	30.02	30.02	30.01	29.98	0.285	0.284	0.28	0.28
2	3	8	11	B	29.98	30.03	29.99	30.02	0.285	0.269	0.27	0.29
2	3	18	11	A	29.99	30.02	30.01	30.02	0.237	0.215	0.25	0.24
3	3	20	11	B	30	30.02	29.98	29.98	0.344	0.358	0.31	0.32
3	3	27	11	A	30.02	30.01	29.98	30.02	0.319	0.313	0.35	0.34
1	5	15	11	A	29.99	29.99	30.02	30.02	0.353	0.349	0.36	0.38
1	5	26	11	B	29.98	30.01	29.98	30.01	0.42	0.403	0.39	0.37
2	5	18	11	A	30.02	29.99	30	30	0.393	0.385	0.31	0.31

2	5	22	11	B	30.02	29.99	30	29.98	0.229	0.222	0.23	0.25
3	5	12	11	A	30.03	30.03	29.99	30.02	0.466	0.437	0.42	0.41
3	5	23	11	B	30.01	30	30.01	30.02	0.323	0.332	0.37	0.35
1	0	23	12	A	29.98	29.99	29.98	30.01	0.06	0.056	0.04	0.05
1	0	24	12	B	30.01	30	30	30.02	0.059	0.065	0.05	0.05
2	0	21	12	A	29.97	29.99	29.99	29.98	0.082	0.078	0.08	0.1
2	0	22	12	B	30.02	30	30	30.01	0.086	0.065	0.1	0.09
3	0	14	12	A	30.01	29.98	29.97	30.01	0.073	0.083	0.08	0.08
3	0	19	12	B	30.03	30	30.03	30.02	0.092	0.086	0.08	0.08
1	1	7	12	A	30	30.02	30	30.02	0.066	0.059	0.07	0.06
1	1	19	12	B	30	29.99	30.01	29.98	0.058	0.066	0.06	0.06
2	1	16	12	A	30	30.01	29.99	30.01	0.099	0.097	0.09	0.09
2	1	17	12	B	29.98	29.99	30.02	29.98	0.241	0.237	0.27	0.26
3	1	21	12	B	29.98	30.01	29.99	30	0.111	0.103	0.12	0.12
3	1	23	12	A	29.98	29.98	29.98	30.02	0.132	0.136	0.1	0.1
1	3	6	12	B	30	30	29.99	30.01	0.129	0.111	0.11	0.11
1	3	14	12	A	30	30.02	29.98	30	0.02	0.098	0.1	0.1
2	3	3	12	B	30.01	30.03	30	29.98	0.126	0.136	0.14	0.13
2	3	27	12	A	30	30.01	30.02	29.98	0.171	0.152	0.14	0.15
3	3	3	12	B	30	29.98	30.02	30	0.185	0.175	0.19	0.19
3	3	22	12	A	29.98	30.01	29.99	30.01	0.221	0.209	0.22	0.2
1	5	5	12	B	30	30	30.02	30.02	0.106	0.107	0.11	0.1
1	5	14	12	A	30.01	29.98	30	30.02	0.13	0.141	0.15	0.15
2	5	16	12	B	29.99	29.99	30.01	29.98	0.178	0.169	0.16	0.16
2	5	20	12	A	30.02	30	29.98	29.99	0.178	0.199	0.17	0.18
3	5	2	12	A	30	30.02	29.98	30	0.212	0.207	0.19	0.19
3	5	13	12	B	30.01	30	30.01	30.02	0.203	0.196	0.24	0.23
1	0	25	13	A	30.02	30.01	30	30.03	0.07	0.074	0.09	0.08
1	0	26	13	B	30	29.99	30	30.03	0.074	0.071	0.07	0.07
2	0	4	13	A	30.01	30.02	30.01	29.99	0.107	0.101	0.11	0.1
2	0	28	13	B	30	30.01	30.01	29.97	0.141	0.149	0.14	0.13
3	0	3	13	B	29.99	30.03	30	30	0.122	0.12	0.13	0.12
3	0	6	13	A	29.99	29.98	30	29.99	0.13	0.122	0.13	0.13

1	1	3	13	A	30.01	30.01	30.01	30.02	0.255	0.244	0.23	0.24
1	1	9	13	B	30.01	29.99	29.98	29.98	0.242	0.244	0.23	0.23
2	1	3	13	A	29.98	29.99	30.02	30	0.103	0.112	0.12	0.11
2	1	4	13	B	30.01	30.02	30.02	30	0.187	0.175	0.28	0.18
3	1	2	13	A	29.99	30	29.99	29.97	0.302	0.329	0.35	0.38
3	1	12	13	B	29.99	30	29.98	29.98	0.367	0.341	0.36	0.38
1	3	2	13	A	29.98	29.99	29.97	30	0.54	0.545	0.57	0.58
1	3	22	13	B	30	30.01	29.99	29.98	0.404	0.389	0.34	0.32
2	3	7	13	B	29.98	29.97	30.01	30.01	0.257	0.24	0.28	0.26
2	3	23	13	A	30	30.01	30.02	30	0.54	0.509	0.5	0.5
3	3	7	13	A	29.98	29.98	30.02	29.99	0.778	0.755	0.59	0.67
3	3	15	13	B	30.03	30	30	30	0.651	0.609	0.59	0.62
1	5	4	13	B	30.01	30.02	30.02	30	0.796	0.715	0.89	0.72
1	5	8	13	A	29.99	30.03	30.02	29.99	0.591	0.595	0.58	0.59
2	5	19	13	A	29.98	29.99	29.98	30	0.282	0.304	0.28	0.36
2	5	26	13	B	30.01	30.02	30.01	30	0.601	0.61	0.58	0.55
3	5	7	13	B	30.01	30.01	29.98	30.02	0.902	0.886	0.82	0.8
3	5	16	13	A	30.01	30.02	30.02	30	0.911	0.853	0.82	0.79
1	0	21	14	A	29.97	30.03	30	29.99	0.049	0.052	0.05	0.05
1	0	22	14	B	30	30.01	30.03	30	0.049	0.049	0.07	0.06
2	0	2	14	B	30.03	30	30.01	30	0.106	0.092	0.09	0.1
2	0	13	14	A	29.99	30.03	30	29.99	0.1	0.102	0.1	0.1
3	0	7	14	A	30.02	30	29.99	30	0.079	0.074	0.08	0.08
3	0	20	14	B	30.01	30.02	29.99	30	0.098	0.098	0.09	0.09
1	1	16	14	A	29.99	30	30	30.02	0.154	0.149	0.16	0.16
1	1	28	14	B	30	30	30.01	29.98	0.188	0.16	0.19	0.17
2	1	10	14	A	30.01	29.98	29.99	3002	0.163	0.163	0.14	0.14
2	1	19	14	B	29.98	29.99	30.01	30	0.336	0.348	0.29	0.3
3	1	20	14	B	29.98	29.98	30.01	30.01	0.211	0.203	0.25	0.26
3	1	25	14	A	30.01	30.02	30	29.99	0.275	0.291	0.24	0.24
1	3	5	14	A	30.01	30.01	29.97	29.99	0.325	0.314	0.36	0.36
1	3	27	14	B	30.01	29.99	30	29.98	0.428	0.427	0.42	0.46
2	3	2	14	B	29.99	30	30.01	29.99	0.269	0.281	0.33	0.3

2	3	19	14	A	29.99	30	29.99	30	0.252	0.271	0.38	0.38
3	3	17	14	A	30.02	29.98	29.99	29.99	0.38	0.388	0.36	0.36
3	3	28	14	B	30.02	30.01	30.01	30	0.138	0.131	0.13	0.14
1	5	21	14	A	30.02	30.02	29.99	30	0.481	0.478	0.44	0.46
1	5	27	14	B	30	30	30.01	29.99	0.5	0.521	0.48	0.46
2	5	8	14	A	29.99	30.02	29.98	30.02	0.204	0.208	0.19	0.2
2	5	15	14	B	30	29.99	29.98	30.02	0.232	0.204	0.22	0.2
3	5	14	14	A	29.98	29.99	29.99	30	0.528	0.531	0.5	0.53
3	5	26	14	B	30.02	30	30.01	29.99	0.509	0.541	0.51	0.46

pH

Date	Batch	Day	Order	RandNumb	Trt	Patty	pH1	pH2	pH3
2/1/2010	1	0	1	102	1	A	5.91	5.85	5.69
2/1/2010	1	0	2	120	1	B	4.78	5.58	5.37
2/1/2010	1	0	3	254	11	A	5.24	5.79	5.7
2/1/2010	1	0	4	672	11	B	5.8	5.6	5.3
2/1/2010	1	0	5	220	5	A	5.65	5.53	5.86
2/1/2010	1	0	6	567	5	B	5.78	5.82	5.83
2/1/2010	1	0	7	739	4	A	5.7	5.77	5.8
2/1/2010	1	0	8	792	4	B	5.68	5.82	5.4
2/1/2010	1	0	9	2	9	A	5.48	5.66	5.83
2/1/2010	1	0	10	642	9	B	5.84	5.67	5.84
2/1/2010	1	0	11	38	6	A	5.84	5.83	5.78
2/1/2010	1	0	12	517	6	B	5.85	5.85	5.82
2/1/2010	1	0	13	227	3	A	5.86	5.83	5.84
2/1/2010	1	0	14	551	3	B	5.82	5.84	5.84
2/1/2010	1	0	15	418	8	A	5.85	5.76	5.85
2/1/2010	1	0	16	223	8	B	5.82	5.84	5.84
2/1/2010	1	0	17	943	7	A	5.82	5.84	5.87
2/1/2010	1	0	18	745	7	B	5.86	5.84	5.8
2/1/2010	1	0	19	263	10	A	5.79	5.85	5.81
2/1/2010	1	0	20	113	10	B	5.84	5.84	5.84
2/1/2010	1	0	21	116	14	A	5.85	5.79	5.83
2/1/2010	1	0	22	523	14	B	5.85	5.84	5.85
2/1/2010	1	0	23	328	12	A	5.61	5.85	5.85
2/1/2010	1	0	24	211	12	B	5.83	5.83	5.83
2/1/2010	1	0	25	360	13	A	5.86	5.83	5.86
2/1/2010	1	0	26	854	13	B	5.86	5.86	5.86
2/1/2010	1	0	27	417	2	A	5.91	5.86	5.86
2/1/2010	1	0	28	704	2	B	5.85	5.85	5.82
2/2/2010	1	1	1	926	2	A	5.91	5.93	5.92
2/2/2010	1	1	2	855	3	B	5.88	5.9	5.88
2/2/2010	1	1	3	165	13	A	5.89	5.89	5.88
2/2/2010	1	1	4	640	1	B	5.64	5.8	5.88
2/2/2010	1	1	5	874	7	B	5.92	5.91	5.91
2/2/2010	1	1	6	785	6	A	5.74	5.85	5.89
2/2/2010	1	1	7	871	12	A	5.84	5.85	5.9
2/2/2010	1	1	8	447	8	B	5.86	5.86	5.87
2/2/2010	1	1	9	244	13	B	5.66	5.9	5.89
2/2/2010	1	1	10	975	11	B	5.89	5.88	5.84
2/2/2010	1	1	11	718	9	A	5.82	5.85	5.87
2/2/2010	1	1	12	512	3	A	5.67	5.87	5.89
2/2/2010	1	1	13	22	8	A	5.84	5.88	5.88
2/2/2010	1	1	14	606	6	B	5.9	5.89	5.83
2/2/2010	1	1	15	847	4	A	5.88	5.85	5.8
2/2/2010	1	1	16	774	14	A	5.93	5.88	5.87

2/2/2010	1	1	17	593	1	A	5.9	5.7	5.85
2/2/2010	1	1	18	234	10	B	5.9	5.89	5.88
2/2/2010	1	1	19	237	12	B	5.87	5.85	5.86
2/2/2010	1	1	20	343	11	A	5.89	5.92	5.92
2/2/2010	1	1	21	138	5	B	5.91	5.9	5.86
2/2/2010	1	1	22	236	9	B	5.9	5.9	5.92
2/2/2010	1	1	23	316	7	A	5.93	5.93	5.95
2/2/2010	1	1	24	779	5	A	5.9	5.9	5.91
2/2/2010	1	1	25	553	2	B	5.92	5.91	5.89
2/2/2010	1	1	26	144	10	A	5.89	5.92	5.92
2/2/2010	1	1	27	922	4	B	5.8	5.86	5.87
2/2/2010	1	1	28	357	14	B	5.94	5.84	5.9
2/4/2010	1	3	1	928	6	B	5.92	5.9	5.89
2/4/2010	1	3	2	695	7	B	5.87	5.85	5.9
2/4/2010	1	3	3	698	2	B	5.9	5.85	5.9
2/4/2010	1	3	4	238	5	B	5.9	5.88	5.88
2/4/2010	1	3	5	887	6	A	5.9	5.89	5.9
2/4/2010	1	3	6	354	7	A	5.78	5.8	5.84
2/4/2010	1	3	7	154	9	B	5.94	5.87	5.87
2/4/2010	1	3	8	846	5	A	5.87	5.89	5.81
2/4/2010	1	3	9	683	13	B	5.85	5.84	5.86
2/4/2010	1	3	10	157	8	A	5.89	5.92	5.89
2/4/2010	1	3	11	338	4	A	5.9	5.89	5.88
2/4/2010	1	3	12	780	1	A	5.8	5.81	5.81
2/4/2010	1	3	13	250	1	B	5.83	5.81	5.76
2/4/2010	1	3	14	325	12	B	5.88	5.82	5.8
2/4/2010	1	3	15	139	10	B	5.95	5.92	5.92
2/4/2010	1	3	16	907	3	A	5.94	5.83	5.81
2/4/2010	1	3	17	952	14	B	5.87	5.9	5.87
2/4/2010	1	3	18	147	14	A	5.84	5.83	5.86
2/4/2010	1	3	19	511	4	B	5.92	5.87	5.85
2/4/2010	1	3	20	978	13	A	5.96	5.94	5.93
2/4/2010	1	3	21	933	11	B	5.84	5.85	5.83
2/4/2010	1	3	22	133	2	A	5.85	5.95	5.91
2/4/2010	1	3	23	777	9	A	5.91	5.89	5.89
2/4/2010	1	3	24	4	8	B	5.93	5.94	5.93
2/4/2010	1	3	25	98	11	A	5.88	5.92	5.84
2/4/2010	1	3	26	24	3	B	5.83	5.83	5.85
2/4/2010	1	3	27	818	12	A	5.88	5.86	5.84
2/4/2010	1	3	28	502	10	A	5.9	5.89	5.88
2/6/2010	1	5	1	771	4	B	5.56	5.64	5.72
2/6/2010	1	5	2	984	14	B	5.61	5.67	5.61
2/6/2010	1	5	3	592	4	A	5.67	5.73	5.6
2/6/2010	1	5	4	362	2	B	5.67	5.65	5.65
2/6/2010	1	5	5	759	10	A	5.64	5.6	5.7
2/6/2010	1	5	6	434	14	A	5.59	5.58	5.59
2/6/2010	1	5	7	326	13	B	5.63	5.6	5.6
2/6/2010	1	5	8	520	3	A	5.63	5.63	5.6

2/6/2010	1	5	9	867	5	B	5.53	5.51	5.51
2/6/2010	1	5	10	554	12	A	5.59	5.63	5.61
2/6/2010	1	5	11	934	6	A	5.49	5.51	5.48
2/6/2010	1	5	12	274	1	A	5.58	5.61	5.62
2/6/2010	1	5	13	917	9	B	5.6	5.58	5.58
2/6/2010	1	5	14	805	8	A	5.58	5.73	5.64
2/6/2010	1	5	15	967	10	B	5.64	5.61	5.6
2/6/2010	1	5	16	256	11	B	5.6	5.59	5.61
2/6/2010	1	5	17	63	6	B	5.55	5.5	5.7
2/6/2010	1	5	18	929	7	A	5.66	5.71	5.59
2/6/2010	1	5	19	269	5	A	5.5	5.5	5.5
2/6/2010	1	5	20	247	13	A	5.67	5.59	5.56
2/6/2010	1	5	21	641	1	B	5.65	5.62	5.63
2/6/2010	1	5	22	540	7	B	5.63	5.65	5.61
2/6/2010	1	5	23	791	12	B	5.59	5.58	5.58
2/6/2010	1	5	24	588	2	A	5.6	5.6	5.59
2/6/2010	1	5	25	334	11	A	5.62	5.58	5.61
2/6/2010	1	5	26	440	8	B	5.59	5.68	5.61
2/6/2010	1	5	27	30	9	A	5.56	5.55	5.54
2/6/2010	1	5	28	959	3	B	5.56	5.56	5.59
2/8/2010	2	0	1	241	7	A	5.72	5.73	5.71
2/8/2010	2	0	2	49	7	B	5.73	5.72	5.7
2/8/2010	2	0	3	115	4	A	5.74	5.69	5.72
2/8/2010	2	0	4	628	4	B	5.7	5.69	5.67
2/8/2010	2	0	5	961	10	A	5.78	5.66	5.69
2/8/2010	2	0	6	242	10	B	5.72	5.72	5.72
2/8/2010	2	0	7	435	6	A	5.51	5.66	5.67
2/8/2010	2	0	8	304	6	B	5.68	5.67	5.69
2/8/2010	2	0	9	257	1	A	5.42	5.52	5.69
2/8/2010	2	0	10	559	1	B	5.68	5.69	5.7
2/8/2010	2	0	11	604	5	A	5.7	5.67	5.59
2/8/2010	2	0	12	947	5	B	5.69	5.65	5.7
2/8/2010	2	0	13	981	8	A	5.49	5.67	5.67
2/8/2010	2	0	14	572	8	B	5.65	5.66	5.67
2/8/2010	2	0	15	253	13	A	5.66	5.65	5.65
2/8/2010	2	0	16	649	13	B	5.67	5.66	5.67
2/8/2010	2	0	17	890	12	A	5.67	5.67	5.6
2/8/2010	2	0	18	15	12	B	5.68	5.68	5.68
2/8/2010	2	0	19	963	3	A	5.66	5.66	5.58
2/8/2010	2	0	20	824	3	B	5.56	5.6	5.67
2/8/2010	2	0	21	927	14	A	5.68	5.65	5.67
2/8/2010	2	0	22	832	14	B	5.57	5.67	5.69
2/8/2010	2	0	23	358	9	A	5.73	5.73	5.71
2/8/2010	2	0	24	8	9	B	5.66	5.71	5.71
2/8/2010	2	0	25	881	11	A	5.68	5.66	5.7
2/8/2010	2	0	26	169	11	B	5.67	5.67	5.67
2/8/2010	2	0	27	457	2	A	5.69	5.67	5.68
2/8/2010	2	0	28	483	2	B	5.63	5.69	5.57

2/9/2010	2	1	1	564	7	B	5.74	5.72	5.72
2/9/2010	2	1	2	496	9	A	5.74	5.75	5.77
2/9/2010	2	1	3	969	11	A	5.72	5.72	5.74
2/9/2010	2	1	4	891	10	A	5.77	5.74	5.74
2/9/2010	2	1	5	573	13	A	5.74	5.74	5.74
2/9/2010	2	1	6	761	2	B	5.72	5.72	5.72
2/9/2010	2	1	7	308	14	B	5.74	5.74	5.76
2/9/2010	2	1	8	395	4	B	5.75	5.74	5.74
2/9/2010	2	1	9	987	2	A	5.71	5.74	5.73
2/9/2010	2	1	10	55	11	B	5.71	5.71	5.76
2/9/2010	2	1	11	198	8	B	5.7	5.72	5.7
2/9/2010	2	1	12	740	3	A	5.72	5.71	5.72
2/9/2010	2	1	13	682	4	A	5.71	5.7	5.76
2/9/2010	2	1	14	108	7	A	5.73	5.7	5.71
2/9/2010	2	1	15	352	6	A	5.74	5.69	5.71
2/9/2010	2	1	16	321	6	B	5.69	5.71	5.7
2/9/2010	2	1	17	470	1	A	5.72	5.71	5.72
2/9/2010	2	1	18	339	14	A	5.73	5.71	5.72
2/9/2010	2	1	19	983	12	A	5.79	5.72	5.71
2/9/2010	2	1	20	869	5	B	5.69	5.69	5.69
2/9/2010	2	1	21	385	12	B	5.74	5.72	5.71
2/9/2010	2	1	22	268	5	A	5.7	5.68	5.69
2/9/2010	2	1	23	724	1	B	5.7	5.76	5.76
2/9/2010	2	1	24	726	10	B	5.77	5.78	5.78
2/9/2010	2	1	25	668	9	B	5.72	5.7	5.75
2/9/2010	2	1	26	577	3	B	5.7	5.76	5.72
2/9/2010	2	1	27	204	13	B	5.75	5.69	5.75
2/9/2010	2	1	28	584	8	A	5.68	5.67	5.74
2/11/2010	2	3	1	600	12	A	5.81	5.85	5.82
2/11/2010	2	3	2	925	1	B	5.83	5.8	5.78
2/11/2010	2	3	3	587	10	B	5.72	5.75	5.76
2/11/2010	2	3	4	679	2	B	5.81	5.81	5.8
2/11/2010	2	3	5	516	6	A	5.83	5.79	5.82
2/11/2010	2	3	6	827	12	B	5.84	5.83	5.83
2/11/2010	2	3	7	696	4	A	5.82	5.8	5.81
2/11/2010	2	3	8	821	8	B	5.83	5.8	5.79
2/11/2010	2	3	9	798	10	A	5.81	5.81	5.79
2/11/2010	2	3	10	188	9	B	5.84	5.83	5.84
2/11/2010	2	3	11	461	8	A	5.81	5.81	5.79
2/11/2010	2	3	12	224	4	B	5.8	5.8	5.8
2/11/2010	2	3	13	275	9	A	5.83	5.82	5.81
2/11/2010	2	3	14	597	11	B	5.8	5.79	5.8
2/11/2010	2	3	15	383	13	B	5.81	5.81	5.79
2/11/2010	2	3	16	124	5	A	5.81	5.78	5.79
2/11/2010	2	3	17	503	14	B	5.81	5.8	5.83
2/11/2010	2	3	18	127	3	B	5.81	5.81	5.78
2/11/2010	2	3	19	930	11	A	5.82	5.81	5.78
2/11/2010	2	3	20	404	14	A	5.85	5.8	5.86

2/11/2010	2	3	21	112	7	A	5.75	5.8	5.78
2/11/2010	2	3	22	99	5	B	5.82	5.78	5.8
2/11/2010	2	3	23	605	13	A	5.77	5.82	5.8
2/11/2010	2	3	24	345	3	A	5.81	5.77	5.8
2/11/2010	2	3	25	77	2	A	5.79	5.8	5.76
2/11/2010	2	3	26	67	6	B	5.76	5.76	5.75
2/11/2010	2	3	27	652	7	B	5.72	5.74	5.72
2/11/2010	2	3	28	518	1	A	5.81	5.82	5.83
2/13/2010	2	5	1	931	5	B	5.66	5.68	5.73
2/13/2010	2	5	2	697	6	A	5.62	5.53	5.55
2/13/2010	2	5	3	772	2	A	5.68	5.57	5.63
2/13/2010	2	5	4	611	9	A	5.54	5.7	5.61
2/13/2010	2	5	5	654	1	B	5.56	5.68	5.69
2/13/2010	2	5	6	207	8	B	5.59	5.64	5.6
2/13/2010	2	5	7	692	11	A	5.79	5.69	5.6
2/13/2010	2	5	8	214	10	B	5.58	5.61	5.53
2/13/2010	2	5	9	337	13	A	5.57	5.58	5.59
2/13/2010	2	5	10	177	2	B	5.63	5.66	5.7
2/13/2010	2	5	11	489	12	A	5.67	5.78	5.63
2/13/2010	2	5	12	669	12	B	5.76	5.79	5.59
2/13/2010	2	5	13	215	7	B	5.52	5.49	5.49
2/13/2010	2	5	14	389	14	B	5.72	5.66	5.72
2/13/2010	2	5	15	667	4	B	5.64	5.59	5.6
2/13/2010	2	5	16	630	3	B	5.65	5.8	5.8
2/13/2010	2	5	17	199	1	A	5.59	5.75	5.74
2/13/2010	2	5	18	781	8	A	5.56	5.6	5.7
2/13/2010	2	5	19	194	3	A	5.8	5.76	5.8
2/13/2010	2	5	20	899	13	B	5.72	5.77	5.75
2/13/2010	2	5	21	240	5	A	5.68	5.6	5.61
2/13/2010	2	5	22	294	4	A	5.67	5.66	5.7
2/13/2010	2	5	23	912	9	B	5.65	5.67	5.64
2/13/2010	2	5	24	720	10	A	5.57	5.55	5.6
2/13/2010	2	5	25	162	11	B	5.66	5.71	5.69
2/13/2010	2	5	26	680	14	A	5.77	5.74	5.73
2/13/2010	2	5	27	353	6	B	5.62	5.65	5.56
2/13/2010	2	5	28	838	7	A	5.57	5.55	5.53
2/15/2010	3	0	1	54	11	A	5.81	5.81	5.81
2/15/2010	3	0	2	228	11	B	5.79	5.81	5.82
2/15/2010	3	0	3	16	5	A	5.8	5.8	5.77
2/15/2010	3	0	4	665	5	B	5.83	5.84	5.74
2/15/2010	3	0	5	994	13	A	5.3	5.82	5.79
2/15/2010	3	0	6	873	13	B	5.81	5.8	5.79
2/15/2010	3	0	7	193	2	A	5.67	5.82	5.81
2/15/2010	3	0	8	989	2	B	5.85	5.84	5.74
2/15/2010	3	0	9	452	9	A	5.81	5.82	5.84
2/15/2010	3	0	10	560	9	B	5.79	5.83	5.79
2/15/2010	3	0	11	119	7	A	5.82	5.74	5.83
2/15/2010	3	0	12	61	7	B	5.76	5.8	5.79

2/15/2010	3	0	13	81	4	A	5.81	5.84	5.8
2/15/2010	3	0	14	918	4	B	5.8	5.8	5.78
2/15/2010	3	0	15	677	8	A	5.8	5.81	5.8
2/15/2010	3	0	16	687	8	B	5.81	5.83	5.81
2/15/2010	3	0	17	612	1	A	5.83	5.82	5.82
2/15/2010	3	0	18	451	1	B	5.79	5.79	5.83
2/15/2010	3	0	19	965	3	A	5.81	5.82	5.81
2/15/2010	3	0	20	888	3	B	5.8	5.81	5.81
2/15/2010	3	0	21	134	12	A	5.73	5.82	5.81
2/15/2010	3	0	22	365	12	B	5.8	5.77	5.81
2/15/2010	3	0	23	862	10	A	5.77	5.8	5.83
2/15/2010	3	0	24	497	10	B	5.82	5.81	5.81
2/15/2010	3	0	25	104	6	A	5.79	5.79	5.79
2/15/2010	3	0	26	923	6	B	5.77	5.78	5.76
2/15/2010	3	0	27	305	14	A	5.83	5.82	5.71
2/15/2010	3	0	28	513	14	B	5.81	5.79	5.81
2/16/2010	3	1	1	281	1	A	5.8	5.75	5.81
2/16/2010	3	1	2	763	7	B	5.86	5.8	5.83
2/16/2010	3	1	3	919	9	A	5.84	5.81	5.82
2/16/2010	3	1	4	966	5	A	5.79	5.82	5.81
2/16/2010	3	1	5	69	14	B	5.83	5.85	5.86
2/16/2010	3	1	6	613	9	B	5.83	5.83	5.84
2/16/2010	3	1	7	681	10	B	5.84	5.83	5.83
2/16/2010	3	1	8	535	6	B	5.78	5.79	5.79
2/16/2010	3	1	9	552	14	A	5.85	5.83	5.84
2/16/2010	3	1	10	48	4	A	5.82	5.83	5.83
2/16/2010	3	1	11	255	8	A	5.84	5.8	5.79
2/16/2010	3	1	12	889	8	B	5.84	5.8	5.84
2/16/2010	3	1	13	396	5	B	5.81	5.81	5.81
2/16/2010	3	1	14	684	13	B	5.85	5.8	5.78
2/16/2010	3	1	15	86	6	A	5.81	5.73	5.79
2/16/2010	3	1	16	894	10	A	5.78	5.83	5.83
2/16/2010	3	1	17	506	1	B	5.84	5.77	5.85
2/16/2010	3	1	18	392	13	A	5.78	5.79	5.8
2/16/2010	3	1	19	608	2	B	5.79	5.77	5.79
2/16/2010	3	1	20	735	11	A	5.84	5.73	5.83
2/16/2010	3	1	21	666	3	B	5.8	5.78	5.77
2/16/2010	3	1	22	482	4	B	5.82	5.78	5.8
2/16/2010	3	1	23	977	12	A	5.79	5.8	5.8
2/16/2010	3	1	24	664	7	A	5.79	5.83	5.84
2/16/2010	3	1	25	948	11	B	5.84	5.77	5.84
2/16/2010	3	1	26	64	2	A	5.76	5.75	5.83
2/16/2010	3	1	27	782	12	B	5.83	5.84	5.85
2/16/2010	3	1	28	56	3	A	5.8	5.81	5.81
2/18/2010	3	3	1	347	13	A	5.79	5.78	5.79
2/18/2010	3	3	2	327	10	B	5.77	5.8	5.78
2/18/2010	3	3	3	866	8	A	5.8	5.8	5.81
2/18/2010	3	3	4	283	3	B	5.78	5.78	5.81

2/18/2010	3	3	5	932	12	B	5.8	5.82	5.8
2/18/2010	3	3	6	972	9	A	5.81	5.82	5.79
2/18/2010	3	3	7	423	9	B	5.86	5.84	5.83
2/18/2010	3	3	8	181	6	B	5.77	5.8	5.78
2/18/2010	3	3	9	676	5	B	5.77	5.77	5.79
2/18/2010	3	3	10	231	13	B	5.8	5.8	5.81
2/18/2010	3	3	11	436	6	A	5.79	5.79	5.79
2/18/2010	3	3	12	841	2	A	5.81	5.83	5.82
2/18/2010	3	3	13	585	5	A	5.81	5.79	5.75
2/18/2010	3	3	14	216	4	B	5.83	5.81	5.81
2/18/2010	3	3	15	533	12	A	5.8	5.83	5.8
2/18/2010	3	3	16	653	1	A	5.81	5.78	5.81
2/18/2010	3	3	17	50	11	B	5.75	5.85	5.78
2/18/2010	3	3	18	150	7	A	5.85	5.83	5.79
2/18/2010	3	3	19	295	4	A	5.82	5.82	5.78
2/18/2010	3	3	20	911	10	A	5.8	5.8	5.8
2/18/2010	3	3	21	359	7	B	5.79	5.81	5.79
2/18/2010	3	3	22	462	1	B	5.79	5.79	5.82
2/18/2010	3	3	23	414	11	A	5.76	5.83	5.74
2/18/2010	3	3	24	817	14	B	5.74	5.85	5.79
2/18/2010	3	3	25	522	2	B	5.77	5.76	5.77
2/18/2010	3	3	26	369	8	B	5.76	5.83	5.79
2/18/2010	3	3	27	155	14	A	5.79	5.78	5.75
2/18/2010	3	3	28	637	3	A	5.8	5.74	5.79
2/20/2010	3	5	1	375	13	A	5.59	5.56	5.54
2/20/2010	3	5	2	350	11	A	5.57	5.55	5.63
2/20/2010	3	5	3	550	5	B	5.42	5.54	5.52
2/20/2010	3	5	4	921	14	A	5.59	5.55	5.52
2/20/2010	3	5	5	950	13	B	5.58	5.6	5.63
2/20/2010	3	5	6	775	12	A	5.57	5.55	5.57
2/20/2010	3	5	7	988	6	B	5.56	5.49	5.58
2/20/2010	3	5	8	741	1	A	5.64	5.66	5.65
2/20/2010	3	5	9	836	1	B	5.71	5.65	5.65
2/20/2010	3	5	10	749	3	B	5.72	5.66	5.72
2/20/2010	3	5	11	161	10	A	5.43	5.48	5.43
2/20/2010	3	5	12	913	10	B	5.49	5.4	5.46
2/20/2010	3	5	13	386	7	B	5.64	5.57	5.57
2/20/2010	3	5	14	734	14	B	5.56	5.54	5.55
2/20/2010	3	5	15	379	7	A	5.53	5.54	5.5
2/20/2010	3	5	16	17	12	B	5.52	5.52	5.57
2/20/2010	3	5	17	678	5	A	5.57	5.53	5.57
2/20/2010	3	5	18	534	8	A	5.51	5.43	5.48
2/20/2010	3	5	19	968	2	B	5.63	5.64	5.59
2/20/2010	3	5	20	374	4	A	5.56	5.6	5.55
2/20/2010	3	5	21	833	6	A	5.56	5.53	5.46
2/20/2010	3	5	22	714	4	B	5.58	5.57	5.56
2/20/2010	3	5	23	364	3	A	5.67	5.65	5.63
2/20/2010	3	5	24	607	2	A	5.67	5.62	5.61

2/20/2010	3	5	25	429	9	A	5.5	5.51	5.52
2/20/2010	3	5	26	850	11	B	5.53	5.53	5.5
2/20/2010	3	5	27	450	8	B	5.48	5.47	5.5
2/20/2010	3	5	28	979	9	B	5.56	5.54	5.52

MINOLTA

Date	Batch	Day	Order	RandNumb	Trt	Patty	ID	L	a	b
2/1/2010	1	0	1	102	1	A	34	53.9842	27.2799	15.014
2/1/2010	1	0	1	102	1	A	35	56.9864	25.5636	16.2579
2/1/2010	1	0	1	102	1	A	36	55.8607	23.6431	13.5459
2/1/2010	1	0	2	120	1	B	37	55.466	21.8441	11.4175
2/1/2010	1	0	2	120	1	B	38	53.8169	23.8534	12.3205
2/1/2010	1	0	2	120	1	B	39	53.4753	24.3916	12.6857
2/1/2010	1	0	3	254	11	A	40	54.5824	20.1645	11.0806
2/1/2010	1	0	3	254	11	A	41	54.7869	21.4489	12.7382
2/1/2010	1	0	3	254	11	A	42	52.0323	19.4285	10.0504
2/1/2010	1	0	4	672	11	B	43	49.7028	26.1278	14.1788
2/1/2010	1	0	4	672	11	B	44	52.3009	24.1624	13.5245
2/1/2010	1	0	4	672	11	B	45	51.8216	24.4192	14.4787
2/1/2010	1	0	5	220	5	A	46	49.0097	21.9003	12.0654
2/1/2010	1	0	5	220	5	A	47	49.7743	22.8127	12.9928
2/1/2010	1	0	5	220	5	A	48	53.3526	21.2908	13.6838
2/1/2010	1	0	6	567	5	B	49	50.8483	22.3963	12.4697
2/1/2010	1	0	6	567	5	B	50	55.1881	19.707	11.1941
2/1/2010	1	0	6	567	5	B	51	50.9408	19.7038	9.57594
2/1/2010	1	0	7	739	4	A	52	53.3584	21.911	11.3223
2/1/2010	1	0	7	739	4	A	53	54.5935	21.8042	13.3075
2/1/2010	1	0	7	739	4	A	54	54.3499	19.7424	10.6617
2/1/2010	1	0	8	792	4	B	55	52.3246	24.1226	14.1787
2/1/2010	1	0	8	792	4	B	56	52.5475	24.043	13.8639
2/1/2010	1	0	8	792	4	B	57	52.7175	23.9096	13.7952
2/1/2010	1	0	9	2	9	A	58	53.0435	22.487	14.5569
2/1/2010	1	0	9	2	9	A	59	49.0201	22.7466	12.253
2/1/2010	1	0	9	2	9	A	60	54.5524	18.8219	10.6034
2/1/2010	1	0	10	642	9	B	61	55.4443	20.7359	12.8462
2/1/2010	1	0	10	642	9	B	62	51.8972	20.0293	10.9582
2/1/2010	1	0	10	642	9	B	63	55.0209	18.0213	9.54977

2/1/2010	1	0	11	38	6	A	64	57.6338	17.9438	10.6308
2/1/2010	1	0	11	38	6	A	65	56.1748	18.9791	10.9075
2/1/2010	1	0	11	38	6	A	66	53.7352	21.234	11.4553
2/1/2010	1	0	12	517	6	B	67	54.1417	20.0337	11.1513
2/1/2010	1	0	12	517	6	B	68	53.8237	22.4724	14.6077
2/1/2010	1	0	12	517	6	B	69	55.5135	19.538	10.1034
2/1/2010	1	0	13	227	3	A	70	56.4147	21.0886	12.2928
2/1/2010	1	0	13	227	3	A	71	55.6623	24.0435	13.5698
2/1/2010	1	0	13	227	3	A	72	54.351	24.6538	14.5563
2/1/2010	1	0	14	551	3	B	73	53.6727	26.5219	15.1607
2/1/2010	1	0	14	551	3	B	74	52.0012	26.0084	14.3462
2/1/2010	1	0	14	551	3	B	75	52.8657	26.92	16.612
2/1/2010	1	0	15	418	8	A	118	49.4807	20.7124	12.5766
2/1/2010	1	0	15	418	8	A	119	48.6178	19.4533	10.8701
2/1/2010	1	0	15	418	8	A	120	47.1799	19.1329	11.6955
2/1/2010	1	0	16	223	8	B	121	46.0401	20.2885	11.1311
2/1/2010	1	0	16	223	8	B	122	46.3428	17.4285	9.56926
2/1/2010	1	0	16	223	8	B	123	48.9023	20.7193	12.5694
2/1/2010	1	0	17	943	7	A	82	53.1349	19.4399	11.8832
2/1/2010	1	0	17	943	7	A	83	52.7502	17.5876	10.3975
2/1/2010	1	0	17	943	7	A	84	48.3055	18.5952	9.36969
2/1/2010	1	0	18	745	7	B	85	49.9894	21.3033	12.292
2/1/2010	1	0	18	745	7	B	86	50.9556	21.1791	12.792
2/1/2010	1	0	18	745	7	B	87	52.4639	20.0747	11.551
2/1/2010	1	0	19	263	10	A	88	52.0048	22.1533	12.7954
2/1/2010	1	0	19	263	10	A	89	58.2601	16.6775	10.2085
2/1/2010	1	0	19	263	10	A	90	51.3086	22.5755	13.4751
2/1/2010	1	0	20	113	10	B	91	48.2654	21.7473	11.4166
2/1/2010	1	0	20	113	10	B	92	49.6438	19.0828	9.96974
2/1/2010	1	0	20	113	10	B	93	50.2459	21.4609	13.3938
2/1/2010	1	0	21	116	14	A	94	54.8332	25.3611	14.1527
2/1/2010	1	0	21	116	14	A	95	58.424	23.6908	13.3417
2/1/2010	1	0	21	116	14	A	96	52.9007	27.4818	16.5734

2/1/2010	1	0	22	523	14	B	97	53.4558	24.6602	14.1558
2/1/2010	1	0	22	523	14	B	98	55.7739	24.0899	14.0328
2/1/2010	1	0	22	523	14	B	99	53.6749	24.5079	14.6945
2/1/2010	1	0	23	328	12	A	100	50.5815	26.0274	15.6414
2/1/2010	1	0	23	328	12	A	101	56.4337	19.3134	10.8987
2/1/2010	1	0	23	328	12	A	102	54.2706	21.3971	12.5591
2/1/2010	1	0	24	211	12	B	103	55.3956	22.8253	13.6175
2/1/2010	1	0	24	211	12	B	104	53.233	24.5956	13.3988
2/1/2010	1	0	24	211	12	B	105	54.099	21.3889	11.4762
2/1/2010	1	0	25	360	13	A	106	49.8572	22.2584	12.1786
2/1/2010	1	0	25	360	13	A	107	59.2816	17.6265	12.4704
2/1/2010	1	0	25	360	13	A	108	50.6462	23.1504	13.3959
2/1/2010	1	0	26	854	13	B	109	52.4769	17.9541	9.19046
2/1/2010	1	0	26	854	13	B	110	52.8844	24.8796	14.4921
2/1/2010	1	0	26	854	13	B	111	53.6624	19.3697	10.7748
2/1/2010	1	0	27	417	2	A	112	55.4768	19.9521	10.7338
2/1/2010	1	0	27	417	2	A	113	53.9255	21.7402	10.8254
2/1/2010	1	0	27	417	2	A	114	52.0955	21.8759	11.8765
2/1/2010	1	0	28	704	2	B	115	54.6234	23.794	13.7615
2/1/2010	1	0	28	704	2	B	116	56.2416	21.5627	11.9884
2/1/2010	1	0	28	704	2	B	117	53.8791	21.5813	10.6132
2/2/2010	1	1	1	926	2	A	124	52.9251	20.733	15.0361
2/2/2010	1	1	1	926	2	A	125	50.0097	19.5527	11.6971
2/2/2010	1	1	1	926	2	A	126	53.3859	16.59	9.64905
2/2/2010	1	1	2	855	3	B	127	51.3049	21.4623	13.6534
2/2/2010	1	1	2	855	3	B	128	51.4655	22.2261	13.8811
2/2/2010	1	1	2	855	3	B	129	53.5461	21.3947	14.8157
2/2/2010	1	1	3	165	13	A	130	50.0806	21.2522	15.3224
2/2/2010	1	1	3	165	13	A	131	53.7227	18.5131	14.8608
2/2/2010	1	1	3	165	13	A	132	49.8483	21.6847	13.7769
2/2/2010	1	1	4	640	1	B	133	52.4863	16.4352	9.17773
2/2/2010	1	1	4	640	1	B	134	47.9496	22.4709	14.1941
2/2/2010	1	1	4	640	1	B	135	52.4592	22.0209	14.1714

2/2/2010	1	1	5	874	7	B	136	48.1394	16.1758	9.00723
2/2/2010	1	1	5	874	7	B	137	48.639	16.3205	10.8192
2/2/2010	1	1	5	874	7	B	138	45.974	18.3284	11.4331
2/2/2010	1	1	6	785	6	A	139	47.7613	20.3524	13.2459
2/2/2010	1	1	6	785	6	A	140	51.4789	15.8639	9.27148
2/2/2010	1	1	6	785	6	A	141	48.7775	15.796	8.78106
2/2/2010	1	1	7	871	12	A	142	50.6387	18.2872	10.7152
2/2/2010	1	1	7	871	12	A	143	53.9548	14.9228	9.21995
2/2/2010	1	1	7	871	12	A	144	53.4455	14.9381	9.91843
2/2/2010	1	1	8	447	8	B	145	49.4819	13.2509	7.93973
2/2/2010	1	1	8	447	8	B	146	44.4075	15.8037	8.97816
2/2/2010	1	1	8	447	8	B	147	41.3508	14.551	8.64362
2/2/2010	1	1	9	244	13	B	148	47.959	20.916	12.1718
2/2/2010	1	1	9	244	13	B	149	49.5296	20.0884	12.1926
2/2/2010	1	1	9	244	13	B	150	50.2169	21.3943	13.2161
2/2/2010	1	1	10	975	11	B	151	49.5553	19.2816	11.5341
2/2/2010	1	1	10	975	11	B	152	48.3362	19.5769	12.4133
2/2/2010	1	1	10	975	11	B	153	49.6349	19.0375	11.6999
2/2/2010	1	1	11	718	9	A	154	51.5491	15.7525	11.1553
2/2/2010	1	1	11	718	9	A	155	51.5479	17.5183	11.5865
2/2/2010	1	1	11	718	9	A	156	48.6905	17.2599	11.1632
2/2/2010	1	1	12	512	3	A	157	58.9704	16.6217	11.6741
2/2/2010	1	1	12	512	3	A	158	54.1294	19.0293	10.8964
2/2/2010	1	1	12	512	3	A	159	53.9018	19.082	12.5721
2/2/2010	1	1	13	22	8	A	160	46.086	14.9622	9.44222
2/2/2010	1	1	13	22	8	A	161	46.3158	14.6249	8.36426
2/2/2010	1	1	13	22	8	A	162	44.5389	15.9859	9.32678
2/2/2010	1	1	14	606	6	B	163	48.5808	19.6485	12.177
2/2/2010	1	1	14	606	6	B	164	46.5143	19.0591	11.346
2/2/2010	1	1	14	606	6	B	165	48.1327	21.7169	15.1416
2/2/2010	1	1	15	847	4	A	166	50.4629	20.4824	14.0075
2/2/2010	1	1	15	847	4	A	167	52.0895	18.5997	11.8332
2/2/2010	1	1	15	847	4	A	168	52.7163	20.567	14.1911

2/2/2010	1	1	16	774	14	A	169	53.7511	16.9001	10.149
2/2/2010	1	1	16	774	14	A	170	52.7993	20.6223	13.5636
2/2/2010	1	1	16	774	14	A	171	50.8273	19.6992	12.4404
2/2/2010	1	1	17	593	1	A	172	52.7876	15.4008	8.64798
2/2/2010	1	1	17	593	1	A	173	50.4579	20.5996	13.4105
2/2/2010	1	1	17	593	1	A	174	51.0712	19.483	12.4262
2/2/2010	1	1	18	234	10	B	175	50.9938	14.2246	8.8305
2/2/2010	1	1	18	234	10	B	176	43.7263	17.0273	9.85786
2/2/2010	1	1	18	234	10	B	177	48.0022	15.732	10.1643
2/2/2010	1	1	19	237	12	B	178	50.6636	19.2724	12.6836
2/2/2010	1	1	19	237	12	B	179	52.7339	15.1683	9.31156
2/2/2010	1	1	19	237	12	B	180	49.1544	19.0524	12.7634
2/2/2010	1	1	20	343	11	A	181	47.8142	21.3606	13.3084
2/2/2010	1	1	20	343	11	A	182	51.5782	16.3721	9.10984
2/2/2010	1	1	20	343	11	A	183	51.0405	19.0177	12.2076
2/2/2010	1	1	21	138	5	B	184	50.9445	21.6632	15.1323
2/2/2010	1	1	21	138	5	B	185	49.7871	20.2779	13.0197
2/2/2010	1	1	21	138	5	B	186	52.6883	19.3933	12.7006
2/2/2010	1	1	22	236	9	B	187	49.088	17.5892	11.3805
2/2/2010	1	1	22	236	9	B	188	51.8984	14.0316	8.60656
2/2/2010	1	1	22	236	9	B	189	49.2985	19.5449	12.6887
2/2/2010	1	1	23	316	7	A	190	46.2931	18.4556	11.1205
2/2/2010	1	1	23	316	7	A	191	47.9185	19.6489	13.5013
2/2/2010	1	1	23	316	7	A	192	46.3698	19.0523	12.1156
2/2/2010	1	1	24	779	5	A	193	52.6226	15.8429	9.30735
2/2/2010	1	1	24	779	5	A	194	50.6748	18.6237	10.7411
2/2/2010	1	1	24	779	5	A	195	52.3151	17.3215	10.0137
2/2/2010	1	1	25	553	2	B	196	51.5128	22.6834	15.3349
2/2/2010	1	1	25	553	2	B	197	50.054	22.0868	14.907
2/2/2010	1	1	25	553	2	B	198	52.1419	20.3698	13.8614
2/2/2010	1	1	26	144	10	A	199	48.1099	15.2837	8.75216
2/2/2010	1	1	26	144	10	A	200	48.6932	16.0974	10.411
2/2/2010	1	1	26	144	10	A	201	45.8948	18.0655	11.3964

2/2/2010	1	1	27	922	4	B	202	51.9773	21.0059	14.3583
2/2/2010	1	1	27	922	4	B	203	52.5827	17.6679	10.4624
2/2/2010	1	1	27	922	4	B	204	51.1142	19.6053	11.923
2/2/2010	1	1	28	357	14	B	205	53.6169	20.0462	13.4242
2/2/2010	1	1	28	357	14	B	206	55.413	18.2635	13.1014
2/2/2010	1	1	28	357	14	B	207	50.5727	21.9674	14.4474
2/4/2010	1	3	1	928	6	B	208	50.4841	17.5905	13.7515
2/4/2010	1	3	1	928	6	B	209	47.4418	16.7519	11.2291
2/4/2010	1	3	1	928	6	B	210	50.3966	15.8878	13.2233
2/4/2010	1	3	2	695	7	B	211	44.563	13.2471	9.48256
2/4/2010	1	3	2	695	7	B	212	49.6182	13.2458	10.7663
2/4/2010	1	3	2	695	7	B	213	48.3228	12.8578	9.81817
2/4/2010	1	3	3	698	2	B	214	50.9507	14.8125	9.99314
2/4/2010	1	3	3	698	2	B	215	50.1476	16.7386	13.2388
2/4/2010	1	3	3	698	2	B	216	50.1412	16.5777	14.2155
2/4/2010	1	3	4	238	5	B	217	50.2735	14.8787	9.65769
2/4/2010	1	3	4	238	5	B	218	50.6971	14.2707	10.2022
2/4/2010	1	3	4	238	5	B	219	47.0718	15.8522	9.10348
2/4/2010	1	3	5	887	6	A	220	47.9631	17.8543	12.2426
2/4/2010	1	3	5	887	6	A	221	47.8752	16.168	10.9355
2/4/2010	1	3	5	887	6	A	222	49.9221	16.0088	11.7678
2/4/2010	1	3	6	354	7	A	223	46.6018	15.1458	11.2548
2/4/2010	1	3	6	354	7	A	224	43.8792	13.4532	9.16905
2/4/2010	1	3	6	354	7	A	225	50.2622	10.5212	8.23968
2/4/2010	1	3	7	154	9	B	226	47.3097	14.0787	11.3748
2/4/2010	1	3	7	154	9	B	227	54.7317	12.5659	10.2321
2/4/2010	1	3	7	154	9	B	228	45.0915	16.1379	10.8341
2/4/2010	1	3	8	846	5	A	229	45.889	16.8292	10.7986
2/4/2010	1	3	8	846	5	A	230	47.3483	16.0102	10.4428
2/4/2010	1	3	8	846	5	A	231	51.4886	15.6158	12.4251
2/4/2010	1	3	9	683	13	B	232	49.2596	14.1265	10.9101
2/4/2010	1	3	9	683	13	B	233	48.8301	12.9563	11.2288
2/4/2010	1	3	9	683	13	B	234	51.2183	14.1726	11.9387

2/4/2010	1	3	10	157	8	A	235	50.91	10.3732	9.37622
2/4/2010	1	3	10	157	8	A	236	49.2363	9.6312	6.49264
2/4/2010	1	3	10	157	8	A	237	48.2092	12.2132	9.77853
2/4/2010	1	3	11	338	4	A	238	54.3276	15.2669	13.2116
2/4/2010	1	3	11	338	4	A	239	50.6101	15.7458	9.62932
2/4/2010	1	3	11	338	4	A	240	48.3535	17.0474	11.3727
2/4/2010	1	3	12	780	1	A	241	48.7195	14.834	12.9127
2/4/2010	1	3	12	780	1	A	242	49.1154	14.5106	12.5626
2/4/2010	1	3	12	780	1	A	243	47.955	13.8639	10.9062
2/4/2010	1	3	13	250	1	B	244	48.7749	16.5153	12.6766
2/4/2010	1	3	13	250	1	B	245	54.2683	11.4051	8.89894
2/4/2010	1	3	13	250	1	B	246	49.0762	13.0927	9.92095
2/4/2010	1	3	14	325	12	B	247	47.8616	11.2777	10.4134
2/4/2010	1	3	14	325	12	B	248	55.1357	11.5967	10.5875
2/4/2010	1	3	14	325	12	B	249	50.5041	14.6763	13.2367
2/4/2010	1	3	15	139	10	B	250	48.468	11.6094	8.45877
2/4/2010	1	3	15	139	10	B	251	46.2517	13.313	10.562
2/4/2010	1	3	15	139	10	B	252	47.1564	14.3065	9.94372
2/4/2010	1	3	16	907	3	A	253	52.5475	15.9531	11.4317
2/4/2010	1	3	16	907	3	A	254	55.8243	14.8199	11.2245
2/4/2010	1	3	16	907	3	A	255	52.6847	16.7314	13.806
2/4/2010	1	3	17	952	14	B	256	48.4733	14.4731	13.0204
2/4/2010	1	3	17	952	14	B	257	49.5064	13.3467	10.4987
2/4/2010	1	3	17	952	14	B	258	48.5331	15.3188	12.7756
2/4/2010	1	3	18	147	14	A	259	53.8021	11.3334	10.6209
2/4/2010	1	3	18	147	14	A	260	53.6066	10.8338	9.3341
2/4/2010	1	3	18	147	14	A	261	48.6588	14.1789	10.8365
2/4/2010	1	3	19	511	4	B	262	49.7424	16.1617	11.9425
2/4/2010	1	3	19	511	4	B	263	52.7093	12.7722	9.25481
2/4/2010	1	3	19	511	4	B	264	51.4352	16.7216	12.3876
2/4/2010	1	3	20	978	13	A	265	51.3744	15.9112	11.7984
2/4/2010	1	3	20	978	13	A	266	49.0175	16.6913	12.3026
2/4/2010	1	3	20	978	13	A	267	47.8291	15.4191	12.3884

2/4/2010	1	3	21	933	11	B	268	45.007	15.0398	10.7242
2/4/2010	1	3	21	933	11	B	269	50.6922	10.5427	9.27001
2/4/2010	1	3	21	933	11	B	270	48.087	14.1686	11.0048
2/4/2010	1	3	22	133	2	A	271	46.8321	16.3837	10.2519
2/4/2010	1	3	22	133	2	A	272	47.5596	17.0555	11.6364
2/4/2010	1	3	22	133	2	A	273	48.48	17.7606	11.891
2/4/2010	1	3	23	777	9	A	274	51.0909	13.0085	10.2812
2/4/2010	1	3	23	777	9	A	275	54.9277	12.6845	10.8104
2/4/2010	1	3	23	777	9	A	276	52.4663	14.4044	11.488
2/4/2010	1	3	24	4	8	B	277	47.3153	14.6068	10.5697
2/4/2010	1	3	24	4	8	B	278	45.6255	12.4439	8.01101
2/4/2010	1	3	24	4	8	B	279	44.5208	11.9895	8.27714
2/4/2010	1	3	25	98	11	A	280	49.8776	13.7693	11.4694
2/4/2010	1	3	25	98	11	A	281	49.4678	14.4485	10.916
2/4/2010	1	3	25	98	11	A	282	51.2927	13.441	11.7501
2/4/2010	1	3	26	24	3	B	283	51.4946	16.303	12.6495
2/4/2010	1	3	26	24	3	B	284	53.6317	13.8112	12.9704
2/4/2010	1	3	26	24	3	B	285	52.5216	15.874	12.7149
2/4/2010	1	3	27	818	12	A	286	48.7564	13.0364	10.4386
2/4/2010	1	3	27	818	12	A	287	48.8721	13.9881	9.73823
2/4/2010	1	3	27	818	12	A	288	52.4769	12.007	8.61181
2/4/2010	1	3	28	502	10	A	289	49.5116	12.2846	12.0385
2/4/2010	1	3	28	502	10	A	290	48.0049	11.3778	8.01985
2/4/2010	1	3	28	502	10	A	291	47.2573	12.3647	8.8263
2/6/2010	1	5	1	771	4	B	1	47.5978	13.8027	10.0549
2/6/2010	1	5	1	771	4	B	2	55.8799	9.89965	8.6924
2/6/2010	1	5	1	771	4	B	3	46.8573	12.5605	10.117
2/6/2010	1	5	2	984	14	B	4	48.541	11.0686	11.7826
2/6/2010	1	5	2	984	14	B	5	46.0157	12.5231	11.4484
2/6/2010	1	5	2	984	14	B	6	48.1327	11.2631	10.9969
2/6/2010	1	5	3	592	4	A	7	47.428	11.4123	9.88598
2/6/2010	1	5	3	592	4	A	8	44.2207	13.4885	10.2682
2/6/2010	1	5	3	592	4	A	9	46.551	12.7146	10.8532

2/6/2010	1	5	4	362	2	B	10	45.4153	14.2562	11.2498
2/6/2010	1	5	4	362	2	B	11	47.0885	13.3032	10.4928
2/6/2010	1	5	4	362	2	B	12	48.5397	12.0622	10.1105
2/6/2010	1	5	5	759	10	A	13	43.8823	10.723	8.63396
2/6/2010	1	5	5	759	10	A	14	45.4534	10.442	8.05619
2/6/2010	1	5	5	759	10	A	15	45.9553	10.4146	9.59707
2/6/2010	1	5	6	434	14	A	16	48.1864	11.4343	11.9104
2/6/2010	1	5	6	434	14	A	17	50.3313	9.36755	10.1806
2/6/2010	1	5	6	434	14	A	18	47.7721	10.3121	10.0865
2/6/2010	1	5	7	326	13	B	19	51.8936	9.67697	7.81543
2/6/2010	1	5	7	326	13	B	20	50.979	10.59	9.94275
2/6/2010	1	5	7	326	13	B	21	55.08	10.4822	12.706
2/6/2010	1	5	8	520	3	A	22	54.5158	11.7333	13.9306
2/6/2010	1	5	8	520	3	A	23	48.2854	9.06069	7.93265
2/6/2010	1	5	8	520	3	A	24	45.4387	13.6272	11.1944
2/6/2010	1	5	9	867	5	B	25	48.545	13.6676	12.5237
2/6/2010	1	5	9	867	5	B	26	43.9346	13.2266	9.84493
2/6/2010	1	5	9	867	5	B	27	45.6313	13.2442	10.4236
2/6/2010	1	5	10	554	12	A	28	49.9577	10.3721	11.2744
2/6/2010	1	5	10	554	12	A	29	51.9546	9.38421	12.2699
2/6/2010	1	5	10	554	12	A	30	48.4906	10.7786	12.1339
2/6/2010	1	5	11	934	6	A	31	46.1532	12.0913	9.66652
2/6/2010	1	5	11	934	6	A	32	46.527	13.512	10.8118
2/6/2010	1	5	11	934	6	A	33	49.2012	13.352	12.0218
2/6/2010	1	5	12	274	1	A	34	51.0455	13.4461	10.9079
2/6/2010	1	5	12	274	1	A	35	53.6135	9.86856	7.5502
2/6/2010	1	5	12	274	1	A	36	48.1153	13.0654	10.6313
2/6/2010	1	5	13	917	9	B	37	44.8015	11.1786	10.1039
2/6/2010	1	5	13	917	9	B	38	47.2546	11.8818	10.4904
2/6/2010	1	5	13	917	9	B	39	49.6336	11.6547	10.8772
2/6/2010	1	5	14	805	8	A	40	45.8183	10.6416	9.21828
2/6/2010	1	5	14	805	8	A	41	45.506	9.60732	8.25198
2/6/2010	1	5	14	805	8	A	42	48.044	9.47257	8.65984

2/6/2010	1	5	15	967	10	B	43	47.1716	9.63751	9.40178
2/6/2010	1	5	15	967	10	B	44	45.9841	8.87218	7.49072
2/6/2010	1	5	15	967	10	B	45	44.1109	10.6203	8.50742
2/6/2010	1	5	16	256	11	B	46	44.8955	12.388	10.5925
2/6/2010	1	5	16	256	11	B	47	46.2032	11.3515	9.86645
2/6/2010	1	5	16	256	11	B	48	46.7073	12.25	10.9612
2/6/2010	1	5	17	63	6	B	49	45.217	14.1054	11.9074
2/6/2010	1	5	17	63	6	B	50	50.5266	12.7362	12.0919
2/6/2010	1	5	17	63	6	B	51	47.9077	13.5452	10.4581
2/6/2010	1	5	18	929	7	A	52	46.1146	11.3983	9.79133
2/6/2010	1	5	18	929	7	A	53	48.9613	11.5608	10.6769
2/6/2010	1	5	18	929	7	A	54	45.0426	11.7062	10.0596
2/6/2010	1	5	19	269	5	A	55	49.1518	12.9865	10.6197
2/6/2010	1	5	19	269	5	A	56	46.4039	13.5863	10.0574
2/6/2010	1	5	19	269	5	A	57	48.4348	13.267	11.5994
2/6/2010	1	5	20	247	13	A	58	48.9194	12.0593	12.2148
2/6/2010	1	5	20	247	13	A	59	47.7055	12.3071	11.8241
2/6/2010	1	5	20	247	13	A	60	45.8385	12.5999	10.48
2/6/2010	1	5	21	641	1	B	61	48.3362	12.3013	9.55858
2/6/2010	1	5	21	641	1	B	62	49.5758	13.5364	11.4434
2/6/2010	1	5	21	641	1	B	63	48.9783	12.539	10.039
2/6/2010	1	5	22	540	7	B	64	43.5009	12.3667	9.41557
2/6/2010	1	5	22	540	7	B	65	50.2459	9.14019	7.19704
2/6/2010	1	5	22	540	7	B	66	47.1772	11.8866	9.84686
2/6/2010	1	5	23	791	12	B	67	48.4268	9.01182	10.6598
2/6/2010	1	5	23	791	12	B	68	46.8195	10.1136	11.68
2/6/2010	1	5	23	791	12	B	69	48.3842	9.81381	10.3073
2/6/2010	1	5	24	588	2	A	70	47.0149	13.7424	10.4421
2/6/2010	1	5	24	588	2	A	71	48.0089	14.7028	11.181
2/6/2010	1	5	24	588	2	A	72	47.9941	12.0185	11.0906
2/6/2010	1	5	25	334	11	A	73	46.4521	11.8231	10.4224
2/6/2010	1	5	25	334	11	A	74	45.9495	11.913	11.6965
2/6/2010	1	5	25	334	11	A	75	44.8418	8.92433	7.6513

2/6/2010	1	5	26	440	8	B	76	42.5835	10.1618	8.34265
2/6/2010	1	5	26	440	8	B	77	45.2288	9.46966	7.38558
2/6/2010	1	5	26	440	8	B	78	48.9272	11.1285	11.4666
2/6/2010	1	5	27	30	9	A	79	51.508	8.14902	6.70821
2/6/2010	1	5	27	30	9	A	80	55.588	8.38684	9.8082
2/6/2010	1	5	27	30	9	A	81	46.6413	11.4237	10.4099
2/6/2010	1	5	28	959	3	B	82	49.2246	15.0195	13.257
2/6/2010	1	5	28	959	3	B	83	49.1023	14.9388	11.9292
2/6/2010	1	5	28	959	3	B	84	49.2077	13.9313	11.7223
2/8/2010	2	0	1	241	7	A	98	59.6376	17.4768	10.4518
2/8/2010	2	0	1	241	7	A	99	57.1921	19.9359	11.9294
2/8/2010	2	0	1	241	7	A	100	54.4636	22.1861	13.6841
2/8/2010	2	0	2	49	7	B	101	55.0483	22.539	13.9145
2/8/2010	2	0	2	49	7	B	102	56.6562	21.0395	13.6938
2/8/2010	2	0	2	49	7	B	103	55.5438	21.3887	13.1125
2/8/2010	2	0	3	115	4	A	104	59.7359	22.1573	13.3876
2/8/2010	2	0	3	115	4	A	105	57.8218	22.6003	13.9837
2/8/2010	2	0	3	115	4	A	106	54.9782	24.6824	15.2043
2/8/2010	2	0	4	628	4	B	107	57.6562	22.5944	12.9877
2/8/2010	2	0	4	628	4	B	108	58.7654	22.3899	13.9657
2/8/2010	2	0	4	628	4	B	109	59.7032	18.7042	10.1011
2/8/2010	2	0	5	961	10	A	110	54.0371	21.3108	13.1414
2/8/2010	2	0	5	961	10	A	111	53.5701	19.0157	12.2811
2/8/2010	2	0	5	961	10	A	112	55.3739	15.5314	8.24658
2/8/2010	2	0	6	242	10	B	113	53.9673	20.1205	12.0257
2/8/2010	2	0	6	242	10	B	114	51.1179	20.6254	12.2928
2/8/2010	2	0	6	242	10	B	115	52.9785	15.5986	8.24319
2/8/2010	2	0	7	435	6	A	116	56.2553	19.6222	12.4242
2/8/2010	2	0	7	435	6	A	117	56.7356	22.0117	14.515
2/8/2010	2	0	7	435	6	A	118	51.9487	22.6492	13.3048
2/8/2010	2	0	8	304	6	B	119	57.1157	18.1644	10.9415
2/8/2010	2	0	8	304	6	B	120	55.7471	19.8891	11.4934
2/8/2010	2	0	8	304	6	B	121	57.8724	17.2517	10.3249

2/8/2010	2	0	9	257	1	A	122	58.4758	21.4	11.8219
2/8/2010	2	0	9	257	1	A	123	58.9232	25.3152	15.8827
2/8/2010	2	0	9	257	1	A	124	56.074	26.3903	16.6553
2/8/2010	2	0	10	559	1	B	125	56.4642	26.9746	16.8387
2/8/2010	2	0	10	559	1	B	126	56.9625	24.2424	15.2927
2/8/2010	2	0	10	559	1	B	127	56.6405	27.5951	17.1573
2/8/2010	2	0	11	604	5	A	128	57.449	21.9765	13.0434
2/8/2010	2	0	11	604	5	A	129	58.8089	21.6057	14.3946
2/8/2010	2	0	11	604	5	A	130	54.9178	16.267	9.09549
2/8/2010	2	0	12	947	5	B	131	57.2055	20.9446	12.9728
2/8/2010	2	0	12	947	5	B	132	54.5336	23.5858	14.4441
2/8/2010	2	0	12	947	5	B	133	57.8106	22.2131	15.1721
2/8/2010	2	0	13	981	8	A	134	50.9001	19.4659	11.6314
2/8/2010	2	0	13	981	8	A	135	53.0226	17.3986	9.83818
2/8/2010	2	0	13	981	8	A	136	53.0886	19.4782	12.0427
2/8/2010	2	0	14	572	8	B	137	57.1962	17.5819	10.3242
2/8/2010	2	0	14	572	8	B	138	54.6898	16.4128	10.264
2/8/2010	2	0	14	572	8	B	139	55.453	16.4204	9.38382
2/8/2010	2	0	15	253	13	A	140	57.2807	23.5336	13.9565
2/8/2010	2	0	15	253	13	A	141	58.5345	24.0595	15.6828
2/8/2010	2	0	15	253	13	A	142	59.0823	22.0119	12.9633
2/8/2010	2	0	16	649	13	B	143	57.9341	25.0332	15.8105
2/8/2010	2	0	16	649	13	B	144	57.9139	23.3522	13.8641
2/8/2010	2	0	16	649	13	B	145	57.922	24.9748	15.4541
2/8/2010	2	0	17	890	12	A	146	56.5168	21.7091	14.1357
2/8/2010	2	0	17	890	12	A	147	56.9282	22.1994	13.7603
2/8/2010	2	0	17	890	12	A	148	57.4541	19.9766	12.1392
2/8/2010	2	0	18	15	12	B	149	54.8486	19.829	12.4332
2/8/2010	2	0	18	15	12	B	150	53.8995	23.8175	15.1723
2/8/2010	2	0	18	15	12	B	151	55.6762	21.2606	13.355
2/8/2010	2	0	19	963	3	A	152	58.9724	21.7103	13.6576
2/8/2010	2	0	19	963	3	A	153	60.4079	22.0979	13.2298
2/8/2010	2	0	19	963	3	A	154	58.7931	24.0752	14.8196

2/8/2010	2	0	20	824	3	B	155	59.9845	21.2749	12.889
2/8/2010	2	0	20	824	3	B	156	57.6847	22.7676	13.448
2/8/2010	2	0	20	824	3	B	157	58.0018	23.9423	15.4041
2/8/2010	2	0	21	927	14	A	158	61.4862	20.6613	12.7067
2/8/2010	2	0	21	927	14	A	159	61.58	20.8191	12.5869
2/8/2010	2	0	21	927	14	A	160	57.6593	23.328	15.376
2/8/2010	2	0	22	832	14	B	161	59.1097	20.9857	12.9329
2/8/2010	2	0	22	832	14	B	162	56.7544	22.8651	13.7804
2/8/2010	2	0	22	832	14	B	163	58.9261	22.3562	13.6202
2/8/2010	2	0	23	358	9	A	164	56.1748	20.15	11.5798
2/8/2010	2	0	23	358	9	A	165	57.7152	18.293	10.6444
2/8/2010	2	0	23	358	9	A	166	53.6806	22.938	14.0964
2/8/2010	2	0	24	8	9	B	167	55.2762	23.2368	14.6039
2/8/2010	2	0	24	8	9	B	168	55.2229	20.501	11.9848
2/8/2010	2	0	24	8	9	B	169	56.2934	18.0331	10.3536
2/8/2010	2	0	25	881	11	A	170	54.5846	22.7261	13.6547
2/8/2010	2	0	25	881	11	A	171	55.1444	20.6037	12.4502
2/8/2010	2	0	25	881	11	A	172	55.6666	24.1916	15.2664
2/8/2010	2	0	26	169	11	B	173	55.4898	23.1235	14.4203
2/8/2010	2	0	26	169	11	B	174	57.9078	20.4189	12.0135
2/8/2010	2	0	26	169	11	B	175	55.6192	24.2168	15.6724
2/8/2010	2	0	27	457	2	A	176	56.4126	25.4298	16.0446
2/8/2010	2	0	27	457	2	A	177	63.6061	21.3388	14.761
2/8/2010	2	0	27	457	2	A	178	61.3711	21.3189	15.2005
2/8/2010	2	0	28	483	2	B	179	59.4799	22.4392	12.9122
2/8/2010	2	0	28	483	2	B	180	57.0971	20.2892	11.5855
2/8/2010	2	0	28	483	2	B	181	60.5184	22.945	15.7513
2/9/2010	2	1	1	564	7	B	192	57.4305	16.6208	10.9296
2/9/2010	2	1	1	564	7	B	193	55.3815	18.1826	11.868
2/9/2010	2	1	1	564	7	B	194	55.0789	17.9343	11.8125
2/9/2010	2	1	2	496	9	A	195	55.311	18.5587	12.0887
2/9/2010	2	1	2	496	9	A	196	54.7185	18.6499	11.7138
2/9/2010	2	1	2	496	9	A	197	51.7555	20.7137	12.6022

2/9/2010	2	1	3	969	11	A	198	55.6418	19.6257	13.1565
2/9/2010	2	1	3	969	11	A	199	55.2088	19.7023	12.4723
2/9/2010	2	1	3	969	11	A	200	55.8874	20.2718	14.1816
2/9/2010	2	1	4	891	10	A	201	54.1428	15.6045	9.87531
2/9/2010	2	1	4	891	10	A	202	55.8725	14.591	8.75716
2/9/2010	2	1	4	891	10	A	203	54.9606	15.3764	10.6897
2/9/2010	2	1	5	573	13	A	204	57.6063	20.4981	13.3946
2/9/2010	2	1	5	573	13	A	205	57.5298	20.5908	13.44
2/9/2010	2	1	5	573	13	A	206	57.8411	18.1614	10.8957
2/9/2010	2	1	6	761	2	B	207	58.233	20.9559	14.0785
2/9/2010	2	1	6	761	2	B	208	56.9967	18.9976	11.4518
2/9/2010	2	1	6	761	2	B	209	57.1271	20.9996	13.1253
2/9/2010	2	1	7	308	14	B	210	51.2036	21.1124	13.0358
2/9/2010	2	1	7	308	14	B	211	55.6827	20.5907	14.2293
2/9/2010	2	1	7	308	14	B	212	55.3989	16.9533	10.52
2/9/2010	2	1	8	395	4	B	213	57.7802	17.1002	10.7166
2/9/2010	2	1	8	395	4	B	214	54.9464	19.9691	12.6692
2/9/2010	2	1	8	395	4	B	215	54.5768	20.6076	12.979
2/9/2010	2	1	9	987	2	A	216	56.343	20.2896	12.4799
2/9/2010	2	1	9	987	2	A	217	53.7738	17.0435	9.73263
2/9/2010	2	1	9	987	2	A	218	56.9832	20.1778	12.2728
2/9/2010	2	1	10	55	11	B	219	54.6909	19.5812	13.0594
2/9/2010	2	1	10	55	11	B	220	56.3188	18.7142	11.774
2/9/2010	2	1	10	55	11	B	221	55.6225	18.4802	11.9825
2/9/2010	2	1	11	198	8	B	222	52.0705	15.8516	9.67219
2/9/2010	2	1	11	198	8	B	223	53.9085	14.8837	9.40575
2/9/2010	2	1	11	198	8	B	224	53.9966	15.354	10.0145
2/9/2010	2	1	12	740	3	A	225	58.8326	19.7275	12.2946
2/9/2010	2	1	12	740	3	A	226	56.7387	20.0488	13.3866
2/9/2010	2	1	12	740	3	A	227	57.1797	21.2029	13.5692
2/9/2010	2	1	13	682	4	A	228	58.5405	18.3616	11.0323
2/9/2010	2	1	13	682	4	A	229	56.0037	21.3676	13.5573
2/9/2010	2	1	13	682	4	A	230	55.2675	23.361	14.5178

2/9/2010	2	1	14	108	7	A	231	53.2007	17.0078	10.7748
2/9/2010	2	1	14	108	7	A	232	55.4995	18.3689	11.7725
2/9/2010	2	1	14	108	7	A	233	55.3555	16.4933	10.4026
2/9/2010	2	1	15	352	6	A	234	57.7091	17.7595	12.0405
2/9/2010	2	1	15	352	6	A	235	56.38	18.9822	13.4447
2/9/2010	2	1	15	352	6	A	236	51.9463	19.4161	12.6764
2/9/2010	2	1	16	321	6	B	237	53.379	17.8768	12.2828
2/9/2010	2	1	16	321	6	B	238	57.2375	16.7243	12.894
2/9/2010	2	1	16	321	6	B	239	55.7375	19.134	13.7786
2/9/2010	2	1	17	470	1	A	240	58.2771	19.3522	12.7553
2/9/2010	2	1	17	470	1	A	241	57.8269	20.2887	12.225
2/9/2010	2	1	17	470	1	A	242	56.2437	20.5297	13.0122
2/9/2010	2	1	18	339	14	A	243	56.6949	21.4409	14.4967
2/9/2010	2	1	18	339	14	A	244	56.5797	20.4626	13.3574
2/9/2010	2	1	18	339	14	A	245	54.7218	19.9358	12.3923
2/9/2010	2	1	19	983	12	A	246	55.5071	18.7374	12.4567
2/9/2010	2	1	19	983	12	A	247	53.7068	18.5905	12.1223
2/9/2010	2	1	19	983	12	A	248	57.7833	18.6015	13.0107
2/9/2010	2	1	20	869	5	B	249	58.0894	18.1033	11.2389
2/9/2010	2	1	20	869	5	B	250	57.8573	19.7047	13.531
2/9/2010	2	1	20	869	5	B	251	57.291	18.9801	12.1713
2/9/2010	2	1	21	385	12	B	252	55.7975	16.2663	10.6812
2/9/2010	2	1	21	385	12	B	253	55.5265	17.8716	11.752
2/9/2010	2	1	21	385	12	B	254	54.2146	19.2372	12.5917
2/9/2010	2	1	22	268	5	A	255	57.4643	20.3736	14.1276
2/9/2010	2	1	22	268	5	A	256	56.1335	19.7316	12.4938
2/9/2010	2	1	22	268	5	A	257	54.0112	20.6958	13.4198
2/9/2010	2	1	23	724	1	B	258	58.3191	21.5825	13.4792
2/9/2010	2	1	23	724	1	B	259	57.3095	20.2774	13.2919
2/9/2010	2	1	23	724	1	B	260	57.0651	19.9658	12.2694
2/9/2010	2	1	24	726	10	B	261	54.2907	14.6994	9.58189
2/9/2010	2	1	24	726	10	B	262	54.5469	16.1519	10.8292
2/9/2010	2	1	24	726	10	B	263	55.2871	14.2005	8.71449

2/9/2010	2	1	25	668	9	B	264	49.5193	21.7884	13.4321
2/9/2010	2	1	25	668	9	B	265	51.1265	20.4522	12.6297
2/9/2010	2	1	25	668	9	B	266	57.3012	19.8177	14.0327
2/9/2010	2	1	26	577	3	B	267	56.9168	21.9339	14.9393
2/9/2010	2	1	26	577	3	B	268	55.6795	20.0184	11.6894
2/9/2010	2	1	26	577	3	B	269	58.4469	20.1038	13.2866
2/9/2010	2	1	27	204	13	B	270	59.597	19.0823	12.1014
2/9/2010	2	1	27	204	13	B	271	56.5577	19.299	11.8386
2/9/2010	2	1	27	204	13	B	272	58.2561	19.1414	12.6102
2/9/2010	2	1	28	584	8	A	273	50.3527	16.9635	10.9528
2/9/2010	2	1	28	584	8	A	274	52.4321	14.9653	9.21062
2/9/2010	2	1	28	584	8	A	275	51.6434	16.7988	10.965
2/11/2010	2	3	1	600	12	A	67	57.18	10.99	8.15
2/11/2010	2	3	1	600	12	A	68	55.47	12.21	8.38
2/11/2010	2	3	1	600	12	A	69	54.75	12.7	9.23
2/11/2010	2	3	2	925	1	B	70	58.79	15.16	8.23
2/11/2010	2	3	2	925	1	B	71	54.98	15.38	8.6
2/11/2010	2	3	2	925	1	B	72	55.24	15.91	7.86
2/11/2010	2	3	3	587	10	B	73	50.61	9.82	8.38
2/11/2010	2	3	3	587	10	B	74	54.75	8.92	8.3
2/11/2010	2	3	3	587	10	B	75	51.36	8.7	7.61
2/11/2010	2	3	4	679	2	B	76	60.71	17.47	8.26
2/11/2010	2	3	4	679	2	B	77	55.93	16.96	7.37
2/11/2010	2	3	4	679	2	B	78	55.62	21.08	11.29
2/11/2010	2	3	5	516	6	A	79	55.68	13.63	8.87
2/11/2010	2	3	5	516	6	A	80	55.19	14.84	8.07
2/11/2010	2	3	5	516	6	A	81	57	15.55	8.82
2/11/2010	2	3	6	827	12	B	82	55.09	12.22	9.59
2/11/2010	2	3	6	827	12	B	83	59.64	12.87	9.28
2/11/2010	2	3	6	827	12	B	84	55.29	13.73	9.93
2/11/2010	2	3	7	696	4	A	85	58.17	13.68	5.87
2/11/2010	2	3	7	696	4	A	86	60.41	15.7	9.35
2/11/2010	2	3	7	696	4	A	87	54.23	17.15	9.13

2/11/2010	2	3	8	821	8	B	88	56.42	7.18	6.42
2/11/2010	2	3	8	821	8	B	89	52.63	6.85	5.89
2/11/2010	2	3	8	821	8	B	90	53.96	7.38	7.32
2/11/2010	2	3	9	798	10	A	91	49.18	9.76	5.96
2/11/2010	2	3	9	798	10	A	92	53.26	11.06	7.16
2/11/2010	2	3	9	798	10	A	93	53.27	10.42	6.38
2/11/2010	2	3	10	188	9	B	94	54.81	11.73	7.62
2/11/2010	2	3	10	188	9	B	95	54.8	12.62	8.32
2/11/2010	2	3	10	188	9	B	96	52.77	14.39	8.2
2/11/2010	2	3	11	461	8	A	97	51.87	9.91	8.8
2/11/2010	2	3	11	461	8	A	98	50.02	8.38	6.09
2/11/2010	2	3	11	461	8	A	99	52.8	7.73	6.14
2/11/2010	2	3	12	224	4	B	100	59.42	15.58	7.41
2/11/2010	2	3	12	224	4	B	101	59.32	15.75	8.75
2/11/2010	2	3	12	224	4	B	102	56.51	16.77	7.34
2/11/2010	2	3	13	275	9	A	103	52.83	15.71	9.03
2/11/2010	2	3	13	275	9	A	104	53.4	14.46	7.83
2/11/2010	2	3	13	275	9	A	105	53.35	13.38	8.18
2/11/2010	2	3	14	597	11	B	106	56.88	11.96	7.77
2/11/2010	2	3	14	597	11	B	107	56.99	11.8	8.01
2/11/2010	2	3	14	597	11	B	108	55.57	12.62	9.34
2/11/2010	2	3	15	383	13	B	109	56.47	10.45	8.79
2/11/2010	2	3	15	383	13	B	110	57.81	10.27	9.39
2/11/2010	2	3	15	383	13	B	111	57.34	10.54	6.95
2/11/2010	2	3	16	124	5	A	112	52.88	19.8	10.08
2/11/2010	2	3	16	124	5	A	113	52.15	15.42	7.23
2/11/2010	2	3	16	124	5	A	114	55.13	18.57	9.63
2/11/2010	2	3	17	503	14	B	115	56.95	10.01	9.27
2/11/2010	2	3	17	503	14	B	116	53.93	10.19	9.8
2/11/2010	2	3	17	503	14	B	117	57.79	10.09	10.9
2/11/2010	2	3	18	127	3	B	118	51.72	20.71	11.56
2/11/2010	2	3	18	127	3	B	119	57.7	20	10.89
2/11/2010	2	3	18	127	3	B	120	56.2	21.98	11.74

2/11/2010	2	3	19	930	11	A	121	55.56	10.83	9
2/11/2010	2	3	19	930	11	A	122	54.97	12.33	7.28
2/11/2010	2	3	19	930	11	A	123	58.45	10.02	10.33
2/11/2010	2	3	20	404	14	A	124	56.68	9.25	8.58
2/11/2010	2	3	20	404	14	A	125	55.41	10.42	11.42
2/11/2010	2	3	20	404	14	A	126	55.74	10.07	9.3
2/11/2010	2	3	21	112	7	A	127	52.72	12.71	7.51
2/11/2010	2	3	21	112	7	A	128	53.94	12.76	8.75
2/11/2010	2	3	21	112	7	A	129	51.95	12.11	6.56
2/11/2010	2	3	22	99	5	B	130	55.96	18.88	9.74
2/11/2010	2	3	22	99	5	B	131	55.48	19.13	10.27
2/11/2010	2	3	22	99	5	B	132	56.07	19.51	10.93
2/11/2010	2	3	23	605	13	A	133	54.9	15.48	10.68
2/11/2010	2	3	23	605	13	A	134	56.58	13.84	10.27
2/11/2010	2	3	23	605	13	A	135	57.78	12.88	8.93
2/11/2010	2	3	24	345	3	A	136	56.92	17.07	7.47
2/11/2010	2	3	24	345	3	A	137	56.02	18.24	11.4
2/11/2010	2	3	24	345	3	A	138	55.88	18.24	8.43
2/11/2010	2	3	25	77	2	A	139	56.11	19.01	10.39
2/11/2010	2	3	25	77	2	A	140	57.22	17.74	10.02
2/11/2010	2	3	25	77	2	A	141	58.36	17.32	7.92
2/11/2010	2	3	26	67	6	B	142	53.7	16.08	9.73
2/11/2010	2	3	26	67	6	B	143	56.19	14.51	10.1
2/11/2010	2	3	26	67	6	B	144	55.05	15.46	9.09
2/11/2010	2	3	27	652	7	B	145	56.5	9.98	7.34
2/11/2010	2	3	27	652	7	B	146	56.04	11.25	7.98
2/11/2010	2	3	27	652	7	B	147	56.31	9.14	5.8
2/11/2010	2	3	28	518	1	A	148	53.82	20.35	10.89
2/11/2010	2	3	28	518	1	A	149	56.21	18.98	10.91
2/11/2010	2	3	28	518	1	A	150	55.06	18.01	10.2
2/13/2010	2	5	1	931	5	B	190	50.9174	11.3278	11.2862
2/13/2010	2	5	1	931	5	B	191	53.9627	11.6001	12.3372
2/13/2010	2	5	1	931	5	B	192	52.3979	11.4659	12.6032

2/13/2010	2	5	2	697	6	A	193	54.7019	9.23925	9.59977
2/13/2010	2	5	2	697	6	A	194	53.2238	9.04072	11.0233
2/13/2010	2	5	2	697	6	A	195	51.9343	8.82425	8.5518
2/13/2010	2	5	3	772	2	A	196	55.6924	12.3315	10.2168
2/13/2010	2	5	3	772	2	A	197	56.1823	12.9125	10.8233
2/13/2010	2	5	3	772	2	A	198	56.5944	12.789	11.8369
2/13/2010	2	5	4	611	9	A	199	53.5279	8.46272	10.9777
2/13/2010	2	5	4	611	9	A	200	52.9704	8.8731	11.5592
2/13/2010	2	5	4	611	9	A	201	51.5346	8.25564	10.6062
2/13/2010	2	5	5	654	1	B	202	55.7718	11.928	12.2835
2/13/2010	2	5	5	654	1	B	203	54.9189	10.8303	11.8598
2/13/2010	2	5	5	654	1	B	204	54.488	12.7282	12.7076
2/13/2010	2	5	6	207	8	B	205	54.0461	6.69801	8.75003
2/13/2010	2	5	6	207	8	B	206	53.8848	6.22478	7.54477
2/13/2010	2	5	6	207	8	B	207	50.9445	6.67791	9.08302
2/13/2010	2	5	7	692	11	A	208	58.3581	7.13849	12.1359
2/13/2010	2	5	7	692	11	A	209	57.5971	7.18701	11.1014
2/13/2010	2	5	7	692	11	A	210	58.6526	7.01138	12.257
2/13/2010	2	5	8	214	10	B	211	50.6114	8.1244	9.33747
2/13/2010	2	5	8	214	10	B	212	50.2333	8.24139	9.95735
2/13/2010	2	5	8	214	10	B	213	51.5358	8.32586	9.52617
2/13/2010	2	5	9	337	13	A	214	55.2795	7.18805	12.56
2/13/2010	2	5	9	337	13	A	215	56.3747	7.28571	12.9312
2/13/2010	2	5	9	337	13	A	216	55.4151	7.59433	13.1883
2/13/2010	2	5	10	177	2	B	217	57.0195	10.9778	12.2859
2/13/2010	2	5	10	177	2	B	218	51.7916	13.3519	12.2122
2/13/2010	2	5	10	177	2	B	219	55.1521	10.9776	12.0989
2/13/2010	2	5	11	489	12	A	220	54.7924	6.87525	9.62363
2/13/2010	2	5	11	489	12	A	221	55.8703	4.851	7.45264
2/13/2010	2	5	11	489	12	A	222	54.3722	7.66904	12.2186
2/13/2010	2	5	12	669	12	B	223	53.379	7.69268	11.2659
2/13/2010	2	5	12	669	12	B	224	54.6045	6.46706	9.94206
2/13/2010	2	5	12	669	12	B	225	55.0089	7.01745	12.1539

2/13/2010	2	5	13	215	7	B	226	51.7615	7.18701	10.6241
2/13/2010	2	5	13	215	7	B	227	52.9123	7.21198	11.6168
2/13/2010	2	5	13	215	7	B	228	51.9343	7.4056	12.0078
2/13/2010	2	5	14	389	14	B	229	53.651	6.26598	10.5421
2/13/2010	2	5	14	389	14	B	230	58.6685	6.77198	11.9037
2/13/2010	2	5	14	389	14	B	231	55.0997	8.05433	14.4147
2/13/2010	2	5	15	667	4	B	232	52.7327	10.5311	11.8286
2/13/2010	2	5	15	667	4	B	233	54.3432	11.1964	9.45221
2/13/2010	2	5	15	667	4	B	234	58.5295	9.32952	10.4614
2/13/2010	2	5	16	630	3	B	235	55.8831	11.7142	11.415
2/13/2010	2	5	16	630	3	B	236	54.478	12.208	12.2405
2/13/2010	2	5	16	630	3	B	237	57.2663	10.6985	12.5651
2/13/2010	2	5	17	199	1	A	238	51.7423	15.7981	12.6811
2/13/2010	2	5	17	199	1	A	239	55.5459	14.6995	11.0569
2/13/2010	2	5	17	199	1	A	240	54.5069	12.1331	9.48972
2/13/2010	2	5	18	781	8	A	241	49.6554	7.57935	9.51267
2/13/2010	2	5	18	781	8	A	242	50.3401	7.28887	9.85553
2/13/2010	2	5	18	781	8	A	243	51.4194	6.94052	9.20959
2/13/2010	2	5	19	194	3	A	244	53.6328	12.1141	10.8635
2/13/2010	2	5	19	194	3	A	245	55.8275	12.1457	11.1932
2/13/2010	2	5	19	194	3	A	246	56.5923	11.6081	11.4486
2/13/2010	2	5	20	899	13	B	247	55.4833	8.32574	11.5062
2/13/2010	2	5	20	899	13	B	248	55.2577	8.79742	11.3261
2/13/2010	2	5	20	899	13	B	249	59.7639	7.19584	9.93895
2/13/2010	2	5	21	240	5	A	250	55.3631	11.0922	10.7495
2/13/2010	2	5	21	240	5	A	251	56.401	11.6601	12.1898
2/13/2010	2	5	21	240	5	A	252	54.6522	11.3941	10.9688
2/13/2010	2	5	22	294	4	A	253	55.9696	10.6993	9.52922
2/13/2010	2	5	22	294	4	A	254	57.9038	11.0502	10.4507
2/13/2010	2	5	22	294	4	A	255	54.419	13.5869	11.6152
2/13/2010	2	5	23	912	9	B	256	55.2654	6.94318	9.20825
2/13/2010	2	5	23	912	9	B	257	52.9297	8.25278	12.1748
2/13/2010	2	5	23	912	9	B	258	56.0623	7.40238	10.7897

2/13/2010	2	5	24	720	10	A	259	56.2066	6.36058	9.99587
2/13/2010	2	5	24	720	10	A	260	53.4466	8.21348	10.3884
2/13/2010	2	5	24	720	10	A	261	53.9176	7.45084	8.81461
2/13/2010	2	5	25	162	11	B	262	57.2745	6.92014	8.74127
2/13/2010	2	5	25	162	11	B	263	55.0822	8.65289	12.9564
2/13/2010	2	5	25	162	11	B	264	57.7122	7.16159	9.58823
2/13/2010	2	5	26	680	14	A	265	56.0091	7.65852	13.4422
2/13/2010	2	5	26	680	14	A	266	57.8674	6.96172	11.3025
2/13/2010	2	5	26	680	14	A	267	54.7483	7.19962	11.4249
2/13/2010	2	5	27	353	6	B	268	54.8376	9.69364	10.1576
2/13/2010	2	5	27	353	6	B	269	54.0315	9.13293	8.46141
2/13/2010	2	5	27	353	6	B	270	52.2571	10.9054	12.5421
2/13/2010	2	5	28	838	7	A	271	53.5084	8.07577	11.2825
2/13/2010	2	5	28	838	7	A	272	55.7729	8.15873	10.6617
2/13/2010	2	5	28	838	7	A	273	55.249	7.67457	9.58232
2/15/2010	3	0	1	54	11	A	275	52.9181	23.9618	13.2794
2/15/2010	3	0	1	54	11	A	276	52.5933	24.0662	14.0738
2/15/2010	3	0	1	54	11	A	277	54.8959	21.5109	12.5249
2/15/2010	3	0	2	228	11	B	278	55.3772	23.4977	14.6567
2/15/2010	3	0	2	228	11	B	279	53.4077	23.9246	14.706
2/15/2010	3	0	2	228	11	B	280	52.8471	23.0383	14.0299
2/15/2010	3	0	3	16	5	A	281	52.295	26.0077	16.2029
2/15/2010	3	0	3	16	5	A	282	54.1855	23.9017	14.0559
2/15/2010	3	0	3	16	5	A	283	56.008	21.8237	13.1608
2/15/2010	3	0	4	665	5	B	284	52.6215	24.1431	13.3238
2/15/2010	3	0	4	665	5	B	285	56.9967	22.1707	14.7163
2/15/2010	3	0	4	665	5	B	286	52.6906	24.5132	15.1215
2/15/2010	3	0	5	994	13	A	287	58.7615	23.0017	15.2646
2/15/2010	3	0	5	994	13	A	288	57.8188	24.4011	14.8298
2/15/2010	3	0	5	994	13	A	289	57.6532	24.6109	15.1277
2/15/2010	3	0	6	873	13	B	290	56.0867	24.0823	14.1295
2/15/2010	3	0	6	873	13	B	291	57.7142	25.1971	15.6581
2/15/2010	3	0	6	873	13	B	292	59.1028	24.9456	15.5007

2/15/2010	3	0	7	193	2	A	293	55.2088	25.1093	15.51
2/15/2010	3	0	7	193	2	A	294	56.8097	26.0328	16.0739
2/15/2010	3	0	7	193	2	A	295	53.561	26.8597	15.9279
2/15/2010	3	0	8	989	2	B	296	56.4905	24.8249	15.7514
2/15/2010	3	0	8	989	2	B	297	53.8927	24.2982	13.7187
2/15/2010	3	0	8	989	2	B	298	52.5204	27.7706	16.34
2/15/2010	3	0	9	452	9	A	299	55.8692	20.7426	13.1311
2/15/2010	3	0	9	452	9	A	300	53.8169	22.4327	13.7863
2/15/2010	3	0	9	452	9	A	301	50.91	24.3672	14.5389
2/15/2010	3	0	10	560	9	B	302	53.3181	22.3381	12.9762
2/15/2010	3	0	10	560	9	B	303	56.3842	22.4862	13.977
2/15/2010	3	0	10	560	9	B	304	52.1348	22.903	13.7578
2/15/2010	3	0	11	119	7	A	305	54.9595	19.7423	11.8292
2/15/2010	3	0	11	119	7	A	306	53.1476	19.4388	11.276
2/15/2010	3	0	11	119	7	A	307	53.1118	20.7074	12.8131
2/15/2010	3	0	12	61	7	B	308	52.7292	22.9061	14.1073
2/15/2010	3	0	12	61	7	B	309	52.7713	21.6991	12.5503
2/15/2010	3	0	12	61	7	B	310	51.3573	21.9823	12.1512
2/15/2010	3	0	13	81	4	A	311	56.1494	22.7107	13.6982
2/15/2010	3	0	13	81	4	A	312	55.3598	24.2248	15.4855
2/15/2010	3	0	13	81	4	A	313	54.9178	22.9261	13.4964
2/15/2010	3	0	14	918	4	B	314	55.2925	23.1583	14.1652
2/15/2010	3	0	14	918	4	B	315	53.4798	23.1985	14.0193
2/15/2010	3	0	14	918	4	B	316	57.3793	21.9856	13.2418
2/15/2010	3	0	15	677	8	A	317	47.8427	22.0208	11.7601
2/15/2010	3	0	15	677	8	A	318	50.6325	19.2433	11.113
2/15/2010	3	0	15	677	8	A	319	49.8648	18.3031	10.7045
2/15/2010	3	0	16	687	8	B	320	49.2765	18.0995	10.6925
2/15/2010	3	0	16	687	8	B	321	45.3376	18.8131	11.253
2/15/2010	3	0	16	687	8	B	322	54.2381	17.188	9.7895
2/15/2010	3	0	17	612	1	A	323	56.1048	25.7129	15.3772
2/15/2010	3	0	17	612	1	A	324	54.0326	26.8834	17.0825
2/15/2010	3	0	17	612	1	A	325	57.8157	22.3352	13.71

2/15/2010	3	0	18	451	1	B	326	55.7031	26.6182	16.2814
2/15/2010	3	0	18	451	1	B	327	55.6838	25.5052	15.0831
2/15/2010	3	0	18	451	1	B	328	58.9851	21.6287	12.0877
2/15/2010	3	0	19	965	3	A	329	55.01	25.1177	14.9226
2/15/2010	3	0	19	965	3	A	330	55.7965	22.5884	12.6767
2/15/2010	3	0	19	965	3	A	331	56.8253	24.3656	15.819
2/15/2010	3	0	20	888	3	B	332	53.9481	27.448	16.0829
2/15/2010	3	0	20	888	3	B	333	51.4679	28.2142	17.1573
2/15/2010	3	0	20	888	3	B	334	55.7729	25.2621	15.4058
2/15/2010	3	0	21	134	12	A	335	58.406	20.3265	12.7712
2/15/2010	3	0	21	134	12	A	336	56.6614	20.6857	11.4673
2/15/2010	3	0	21	134	12	A	337	53.6032	21.8726	12.4419
2/15/2010	3	0	22	365	12	B	338	53.3216	22.1483	13.8452
2/15/2010	3	0	22	365	12	B	339	52.7853	22.8148	14.4342
2/15/2010	3	0	22	365	12	B	340	54.1237	23.8289	15.1075
2/15/2010	3	0	23	862	10	A	341	52.4097	18.4138	11.2479
2/15/2010	3	0	23	862	10	A	342	53.1995	18.0659	9.69822
2/15/2010	3	0	23	862	10	A	343	54.0709	17.1406	10.7146
2/15/2010	3	0	24	497	10	B	344	53.3526	19.5138	11.3962
2/15/2010	3	0	24	497	10	B	345	49.5077	20.0891	11.2096
2/15/2010	3	0	24	497	10	B	346	54.1552	20.5256	12.2749
2/15/2010	3	0	25	104	6	A	347	58.4947	17.4415	10.0746
2/15/2010	3	0	25	104	6	A	348	52.811	21.7595	13.9922
2/15/2010	3	0	25	104	6	A	349	54.1428	22.1876	14.3397
2/15/2010	3	0	26	923	6	B	350	56.125	23.539	13.6761
2/15/2010	3	0	26	923	6	B	351	51.8324	24.395	15.1395
2/15/2010	3	0	26	923	6	B	352	52.5028	23.3678	14.6553
2/15/2010	3	0	27	305	14	A	353	55.0691	24.8095	14.4207
2/15/2010	3	0	27	305	14	A	354	55.0319	25.2409	14.4406
2/15/2010	3	0	27	305	14	A	355	56.793	22.5673	13.1681
2/15/2010	3	0	28	513	14	B	356	58.1115	24.1501	15.3307
2/15/2010	3	0	28	513	14	B	357	54.7273	22.801	13.7979
2/15/2010	3	0	28	513	14	B	358	55.1543	23.8987	14.4669

2/16/2010	3	1	1	281	1	A	360	57.2591	20.5743	13.0976
2/16/2010	3	1	1	281	1	A	361	57.1766	21.2282	13.62
2/16/2010	3	1	1	281	1	A	362	57.5001	21.2637	14.2805
2/16/2010	3	1	2	763	7	B	363	52.9344	17.2096	10.2303
2/16/2010	3	1	2	763	7	B	364	52.4734	17.1395	10.6043
2/16/2010	3	1	2	763	7	B	365	59.6163	14.7914	9.61559
2/16/2010	3	1	3	919	9	A	366	52.5733	18.7841	10.385
2/16/2010	3	1	3	919	9	A	367	54.1754	19.2453	11.5116
2/16/2010	3	1	3	919	9	A	368	55.7697	19.0831	12.4202
2/16/2010	3	1	4	966	5	A	369	55.5643	19.9225	13.2995
2/16/2010	3	1	4	966	5	A	370	54.5868	16.5634	9.60405
2/16/2010	3	1	4	966	5	A	371	58.3041	17.2491	10.6319
2/16/2010	3	1	5	69	14	B	372	58.5921	19.0159	13.0976
2/16/2010	3	1	5	69	14	B	373	56.075	19.3307	12.8656
2/16/2010	3	1	5	69	14	B	374	55.8532	19.8267	13.0555
2/16/2010	3	1	6	613	9	B	375	53.5256	17.4917	10.7033
2/16/2010	3	1	6	613	9	B	376	54.6057	19.4375	12.6129
2/16/2010	3	1	6	613	9	B	377	53.7034	18.561	12.3101
2/16/2010	3	1	7	681	10	B	378	54.0495	15.8818	9.80803
2/16/2010	3	1	7	681	10	B	379	55.2741	18.1186	12.053
2/16/2010	3	1	7	681	10	B	380	54.6378	16.4619	10.2848
2/16/2010	3	1	8	535	6	B	381	54.7262	18.9394	12.1082
2/16/2010	3	1	8	535	6	B	382	52.8751	18.5927	11.0785
2/16/2010	3	1	8	535	6	B	383	55.5027	19.6349	13.4735
2/16/2010	3	1	9	552	14	A	384	59.2153	20.614	13.7852
2/16/2010	3	1	9	552	14	A	385	56.1844	20.6831	12.7583
2/16/2010	3	1	9	552	14	A	386	55.7932	21.2929	13.9195
2/16/2010	3	1	10	48	4	A	387	52.9983	20.3372	12.2908
2/16/2010	3	1	10	48	4	A	388	53.6374	19.905	12.4182
2/16/2010	3	1	10	48	4	A	389	54.9573	18.5054	11.9481
2/16/2010	3	1	11	255	8	A	390	51.0073	12.6165	6.4089
2/16/2010	3	1	11	255	8	A	391	50.193	13.1657	7.17014
2/16/2010	3	1	11	255	8	A	392	52.0705	17.8838	10.8704

2/16/2010	3	1	12	889	8	B	393	53.084	18.176	10.7991
2/16/2010	3	1	12	889	8	B	394	50.8136	13.3173	7.62178
2/16/2010	3	1	12	889	8	B	395	49.6195	15.1054	8.99853
2/16/2010	3	1	13	396	5	B	396	55.8211	19.4871	12.8107
2/16/2010	3	1	13	396	5	B	397	57.0154	17.7142	11.7903
2/16/2010	3	1	13	396	5	B	398	56.125	18.1106	11.0926
2/16/2010	3	1	14	684	13	B	399	54.886	20.1657	13.2716
2/16/2010	3	1	14	684	13	B	400	57.3012	19.4174	12.4607
2/16/2010	3	1	14	684	13	B	401	54.3532	20.25	12.9581
2/16/2010	3	1	15	86	6	A	402	57.5757	17.7969	11.6846
2/16/2010	3	1	15	86	6	A	403	53.9164	19.8859	12.9439
2/16/2010	3	1	15	86	6	A	404	55.0143	16.0553	9.11648
2/16/2010	3	1	16	894	10	A	405	51.647	16.8211	10.201
2/16/2010	3	1	16	894	10	A	406	52.5181	17.6201	10.7793
2/16/2010	3	1	16	894	10	A	407	52.1823	17.8754	10.6602
2/16/2010	3	1	17	506	1	B	408	54.2404	22.7657	14.2665
2/16/2010	3	1	17	506	1	B	409	57.7711	20.3323	13.0707
2/16/2010	3	1	17	506	1	B	410	54.5402	24.2277	14.6332
2/16/2010	3	1	18	392	13	A	411	55.9856	22.8814	13.6003
2/16/2010	3	1	18	392	13	A	412	57.0371	21.124	13.1089
2/16/2010	3	1	18	392	13	A	413	58.6942	19.6182	13.7538
2/16/2010	3	1	19	608	2	B	414	59.0783	19.5738	12.5834
2/16/2010	3	1	19	608	2	B	415	59.2377	19.6125	12.5339
2/16/2010	3	1	19	608	2	B	416	56.6687	20.638	13.3814
2/16/2010	3	1	20	735	11	A	417	56.4495	19.2331	12.169
2/16/2010	3	1	20	735	11	A	418	56.0389	19.995	12.5822
2/16/2010	3	1	20	735	11	A	419	55.2077	21.288	13.7437
2/16/2010	3	1	21	666	3	B	420	57.3547	20.7629	14.0064
2/16/2010	3	1	21	666	3	B	421	57.9078	20.1873	13.5595
2/16/2010	3	1	21	666	3	B	422	56.7022	19.5488	12.4832
2/16/2010	3	1	22	482	4	B	423	55.0767	18.6793	11.0811
2/16/2010	3	1	22	482	4	B	424	55.2142	18.368	10.9539
2/16/2010	3	1	22	482	4	B	425	54.332	20.3415	13.4594

2/16/2010	3	1	23	977	12	A	426	55.9408	18.7294	12.1753
2/16/2010	3	1	23	977	12	A	427	50.5802	19.0794	11.1186
2/16/2010	3	1	23	977	12	A	428	53.1972	20.6939	13.1082
2/16/2010	3	1	24	664	7	A	429	55.5157	16.3	9.7159
2/16/2010	3	1	24	664	7	A	430	53.5975	16.9172	11.2614
2/16/2010	3	1	24	664	7	A	431	53.6146	18.5889	11.0114
2/16/2010	3	1	25	948	11	B	432	58.3891	18.2741	11.8206
2/16/2010	3	1	25	948	11	B	433	55.336	18.6504	12.5024
2/16/2010	3	1	25	948	11	B	434	57.0971	19.1026	12.1863
2/16/2010	3	1	26	64	2	A	435	54.1899	18.9427	11.1328
2/16/2010	3	1	26	64	2	A	436	55.673	20.2959	12.7508
2/16/2010	3	1	26	64	2	A	437	55.9984	22.0283	14.0277
2/16/2010	3	1	27	782	12	B	438	54.4524	19.607	12.7811
2/16/2010	3	1	27	782	12	B	439	53.9063	20.1916	13.2921
2/16/2010	3	1	27	782	12	B	440	55.5783	17.3218	10.9728
2/16/2010	3	1	28	56	3	A	441	55.804	20.0349	13.1186
2/16/2010	3	1	28	56	3	A	442	57.125	18.9823	11.9361
2/16/2010	3	1	28	56	3	A	443	58.2681	19.6606	13.7394
2/18/2010	3	3	1	347	13	A	444	58.3631	13.8959	10.0108
2/18/2010	3	3	1	347	13	A	445	57.7366	15.07	11.1572
2/18/2010	3	3	1	347	13	A	446	57.3434	14.8419	12.2861
2/18/2010	3	3	2	327	10	B	447	51.8456	11.2682	9.49654
2/18/2010	3	3	2	327	10	B	448	54.0338	11.5191	9.63755
2/18/2010	3	3	2	327	10	B	449	51.1767	10.7762	7.74745
2/18/2010	3	3	3	866	8	A	450	54.7207	9.91095	7.95664
2/18/2010	3	3	3	866	8	A	451	50.2823	10.4088	8.0108
2/18/2010	3	3	3	866	8	A	452	51.6989	11.7294	9.90835
2/18/2010	3	3	4	283	3	B	453	51.7928	20.0915	13.0702
2/18/2010	3	3	4	283	3	B	454	54.4869	19.0524	12.6436
2/18/2010	3	3	4	283	3	B	455	54.5336	17.8537	12.9106
2/18/2010	3	3	5	932	12	B	468	54.9716	11.7377	11.0838
2/18/2010	3	3	5	932	12	B	469	53.9108	12.6995	9.95681
2/18/2010	3	3	5	932	12	B	470	54.558	11.6103	10.1196

2/18/2010	3	3	6	972	9	A	459	55.0898	12.9344	10.1423
2/18/2010	3	3	6	972	9	A	460	57.329	14.2855	9.49728
2/18/2010	3	3	6	972	9	A	461	56.4253	14.5348	11.1056
2/18/2010	3	3	7	423	9	B	462	49.3697	16.6132	11.1046
2/18/2010	3	3	7	423	9	B	463	53.0075	10.7672	6.72709
2/18/2010	3	3	7	423	9	B	464	51.9905	15.2032	10.6396
2/18/2010	3	3	8	181	6	B	465	53.5381	16.4802	12.2133
2/18/2010	3	3	8	181	6	B	466	50.9741	16.0427	11.6519
2/18/2010	3	3	8	181	6	B	467	55.9824	13.064	12.3275
2/18/2010	3	3	9	676	5	B	471	55.3837	16.9203	12.4602
2/18/2010	3	3	9	676	5	B	472	58.244	13.9611	10.7439
2/18/2010	3	3	9	676	5	B	473	54.7019	16.6487	11.2246
2/18/2010	3	3	10	231	13	B	474	57.331	14.3262	12.9067
2/18/2010	3	3	10	231	13	B	475	56.9801	14.0618	11.455
2/18/2010	3	3	10	231	13	B	476	56.0453	14.0987	12.1381
2/18/2010	3	3	11	436	6	A	477	56.0293	15.0207	11.764
2/18/2010	3	3	11	436	6	A	478	52.882	16.217	11.6223
2/18/2010	3	3	11	436	6	A	479	53.6419	15.3959	10.3182
2/18/2010	3	3	12	841	2	A	480	55.6354	18.0451	11.5742
2/18/2010	3	3	12	841	2	A	481	56.8149	19.0672	13.0777
2/18/2010	3	3	12	841	2	A	482	56.9843	18.3532	12.4175
2/18/2010	3	3	13	585	5	A	483	55.5804	15.3434	10.4933
2/18/2010	3	3	13	585	5	A	484	55.2382	15.8316	11.3515
2/18/2010	3	3	13	585	5	A	485	51.5963	15.6065	11.4495
2/18/2010	3	3	14	216	4	B	486	55.0132	15.2369	9.64254
2/18/2010	3	3	14	216	4	B	487	56.3504	18.9777	14.4427
2/18/2010	3	3	14	216	4	B	488	56.2913	15.9337	11.2208
2/18/2010	3	3	15	533	12	A	489	54.9332	13.2822	9.21595
2/18/2010	3	3	15	533	12	A	490	53.7136	12.4072	9.58473
2/18/2010	3	3	15	533	12	A	491	57.8593	13.3695	11.005
2/18/2010	3	3	16	653	1	A	492	57.1694	17.5268	12.474
2/18/2010	3	3	16	653	1	A	493	53.7613	17.641	12.5515
2/18/2010	3	3	16	653	1	A	494	56.6656	17.4791	11.5446

2/18/2010	3	3	17	50	11	B	495	56.0261	14.0315	11.3349
2/18/2010	3	3	17	50	11	B	496	57.4991	12.2709	8.54756
2/18/2010	3	3	17	50	11	B	497	54.1114	16.5097	12.1391
2/18/2010	3	3	18	150	7	A	498	55.976	11.3401	10.6028
2/18/2010	3	3	18	150	7	A	499	54.0552	13.9313	9.34743
2/18/2010	3	3	18	150	7	A	500	50.3477	14.1545	10.4376
2/18/2010	3	3	19	295	4	A	501	58.1779	16.8689	12.1557
2/18/2010	3	3	19	295	4	A	502	54.6499	19.586	12.7016
2/18/2010	3	3	19	295	4	A	503	56.8045	15.5271	11.1991
2/18/2010	3	3	20	911	10	A	504	51.6929	11.9266	9.76692
2/18/2010	3	3	20	911	10	A	505	52.3329	10.1228	8.96287
2/18/2010	3	3	20	911	10	A	506	52.2666	13.1665	10.8355
2/18/2010	3	3	21	359	7	B	507	54.3097	13.753	10.6446
2/18/2010	3	3	21	359	7	B	508	54.5613	11.3244	7.70262
2/18/2010	3	3	21	359	7	B	509	52.6965	13.1533	8.55375
2/18/2010	3	3	22	462	1	B	510	56.7565	16.7077	10.9832
2/18/2010	3	3	22	462	1	B	511	54.4146	19.5241	12.7533
2/18/2010	3	3	22	462	1	B	512	59.9577	17.4176	13.588
2/18/2010	3	3	23	414	11	A	513	57.3382	15.554	11.1107
2/18/2010	3	3	23	414	11	A	514	59.2933	14.8468	11.9263
2/18/2010	3	3	23	414	11	A	515	56.6646	15.0418	12.2087
2/18/2010	3	3	24	817	14	B	516	59.7167	10.6136	9.39942
2/18/2010	3	3	24	817	14	B	517	55.7729	13.0288	12.0685
2/18/2010	3	3	24	817	14	B	518	57.1467	12.7877	9.28003
2/18/2010	3	3	25	522	2	B	519	55.1084	16.4125	10.3356
2/18/2010	3	3	25	522	2	B	520	54.2616	18.4112	12.1456
2/18/2010	3	3	25	522	2	B	521	55.4281	18.0454	11.4386
2/18/2010	3	3	26	369	8	B	522	56.7909	11.2777	9.8763
2/18/2010	3	3	26	369	8	B	523	50.9224	9.96111	7.39518
2/18/2010	3	3	26	369	8	B	524	56.3082	8.70502	7.51697
2/18/2010	3	3	27	155	14	A	525	57.1725	11.9798	12.6963
2/18/2010	3	3	27	155	14	A	526	57.4418	12.051	12.1442
2/18/2010	3	3	27	155	14	A	527	54.6356	12.0652	9.60223

2/18/2010	3	3	28	637	3	A	528	57.5308	17.1284	11.2935
2/18/2010	3	3	28	637	3	A	529	57.3505	17.1807	11.0177
2/18/2010	3	3	28	637	3	A	530	55.9355	19.414	13.5481
2/20/2010	3	5	1	375	13	A	1	57.0661	9.1629	11.4291
2/20/2010	3	5	1	375	13	A	2	59.0018	7.7962	14.0473
2/20/2010	3	5	1	375	13	A	3	55.8789	9.78073	13.848
2/20/2010	3	5	2	350	11	A	4	56.2088	8.98424	9.44998
2/20/2010	3	5	2	350	11	A	5	56.108	9.25588	11.7891
2/20/2010	3	5	2	350	11	A	6	57.0351	8.32826	9.98788
2/20/2010	3	5	3	550	5	B	7	56.0463	14.1069	10.5984
2/20/2010	3	5	3	550	5	B	8	53.9357	13.2811	11.6932
2/20/2010	3	5	3	550	5	B	9	53.7897	13.6006	12.2883
2/20/2010	3	5	4	921	14	A	10	55.7493	8.71139	13.1647
2/20/2010	3	5	4	921	14	A	11	49.3697	11.2357	13.4374
2/20/2010	3	5	4	921	14	A	12	58.424	7.21947	9.26485
2/20/2010	3	5	5	950	13	B	13	55.1881	10.4647	11.8608
2/20/2010	3	5	5	950	13	B	14	54.942	12.7963	11.8432
2/20/2010	3	5	5	950	13	B	15	57.8583	10.8352	12.1551
2/20/2010	3	5	6	775	12	A	16	54.2549	9.19205	12.2291
2/20/2010	3	5	6	775	12	A	17	55.1324	8.95776	12.7822
2/20/2010	3	5	6	775	12	A	18	53.9571	8.70611	11.8068
2/20/2010	3	5	7	988	6	B	19	56.7753	11.3793	10.5102
2/20/2010	3	5	7	988	6	B	20	54.6123	12.709	13.315
2/20/2010	3	5	7	988	6	B	21	54.8596	10.8745	12.6523
2/20/2010	3	5	8	741	1	A	22	55.0658	12.8347	11.9321
2/20/2010	3	5	8	741	1	A	23	56.5944	12.2399	12.5271
2/20/2010	3	5	8	741	1	A	24	59.4731	11.5284	13.5649
2/20/2010	3	5	9	836	1	B	25	57.1168	11.0042	11.9049
2/20/2010	3	5	9	836	1	B	26	56.8492	11.1372	12.5329
2/20/2010	3	5	9	836	1	B	27	56.2902	11.4999	13.1852
2/20/2010	3	5	10	749	3	B	28	56.5724	16.6313	12.7644
2/20/2010	3	5	10	749	3	B	29	56.196	16.3359	13.005
2/20/2010	3	5	10	749	3	B	30	60.6455	13.83	11.2539

2/20/2010	3	5	11	161	10	A	31	53.8157	7.62487	10.0443
2/20/2010	3	5	11	161	10	A	32	52.8086	7.58576	9.4075
2/20/2010	3	5	11	161	10	A	33	52.7222	7.26489	8.9038
2/20/2010	3	5	12	913	10	B	34	51.6844	6.75217	6.273
2/20/2010	3	5	12	913	10	B	35	49.2441	7.80644	9.63878
2/20/2010	3	5	12	913	10	B	36	56.4947	7.07775	9.05987
2/20/2010	3	5	13	386	7	B	37	53.457	9.35119	10.5912
2/20/2010	3	5	13	386	7	B	38	51.5649	9.04296	8.74338
2/20/2010	3	5	13	386	7	B	39	53.3641	10.3698	10.8569
2/20/2010	3	5	14	734	14	B	40	55.2055	8.22581	9.05188
2/20/2010	3	5	14	734	14	B	41	53.8972	9.80955	10.7013
2/20/2010	3	5	14	734	14	B	42	56.4242	8.5603	12.7368
2/20/2010	3	5	15	379	7	A	43	54.6278	8.10248	10.4554
2/20/2010	3	5	15	379	7	A	44	54.4446	8.88741	11.9779
2/20/2010	3	5	15	379	7	A	45	56.698	7.02477	10.0955
2/20/2010	3	5	16	17	12	B	47	57.3218	8.78874	11.2486
2/20/2010	3	5	16	17	12	B	48	53.5096	8.95874	10.6099
2/20/2010	3	5	16	17	12	B	49	53.2618	9.21515	11.5445
2/20/2010	3	5	17	678	5	A	50	55.5168	14.5182	12.5294
2/20/2010	3	5	17	678	5	A	51	54.6566	13.4302	10.4556
2/20/2010	3	5	17	678	5	A	52	54.2448	11.8483	10.6674
2/20/2010	3	5	18	534	8	A	53	49.3218	7.30929	8.07513
2/20/2010	3	5	18	534	8	A	54	52.0072	7.2762	9.48704
2/20/2010	3	5	18	534	8	A	55	52.9367	7.80155	10.9524
2/20/2010	3	5	19	968	2	B	56	57.6735	9.37803	9.99986
2/20/2010	3	5	19	968	2	B	57	58.1347	10.0302	8.57244
2/20/2010	3	5	19	968	2	B	58	57.2632	10.9357	11.4258
2/20/2010	3	5	20	374	4	A	59	54.5935	11.6607	10.0311
2/20/2010	3	5	20	374	4	A	60	54.209	14.3756	12.6802
2/20/2010	3	5	20	374	4	A	61	54.8056	13.9339	12.715
2/20/2010	3	5	21	833	6	A	62	57.2158	9.52298	12.0023
2/20/2010	3	5	21	833	6	A	63	52.5992	13.006	12.5009
2/20/2010	3	5	21	833	6	A	64	52.7269	11.2349	11.67

2/20/2010	3	5	22	714	4	B	65	56.9781	13.3554	9.7492
2/20/2010	3	5	22	714	4	B	66	57.4459	14.5933	11.4201
2/20/2010	3	5	22	714	4	B	67	54.6156	16.3033	12.3628
2/20/2010	3	5	23	364	3	A	68	52.804	13.8217	10.1137
2/20/2010	3	5	23	364	3	A	69	55.4768	11.4785	10.4707
2/20/2010	3	5	23	364	3	A	70	56.1929	10.9624	9.65479
2/20/2010	3	5	24	607	2	A	71	53.7022	15.9846	12.7082
2/20/2010	3	5	24	607	2	A	72	54.9112	15.7159	12.9484
2/20/2010	3	5	24	607	2	A	73	57.6409	13.6209	12.5437
2/20/2010	3	5	25	429	9	A	74	55.5233	9.71238	11.6204
2/20/2010	3	5	25	429	9	A	75	53.7897	8.13919	10.581
2/20/2010	3	5	25	429	9	A	76	54.9508	10.3823	11.2106
2/20/2010	3	5	26	850	11	B	77	56.0186	8.86461	10.0304
2/20/2010	3	5	26	850	11	B	78	53.2168	10.8867	11.7483
2/20/2010	3	5	26	850	11	B	79	55.0898	9.12779	12.5281
2/20/2010	3	5	27	450	8	B	80	51.4582	7.0528	8.0965
2/20/2010	3	5	27	450	8	B	81	47.8765	8.37446	10.3823
2/20/2010	3	5	27	450	8	B	82	50.5279	7.92995	8.28652
2/20/2010	3	5	28	979	9	B	83	55.261	10.0518	11.6185
2/20/2010	3	5	28	979	9	B	84	54.9101	10.4356	12.7927
2/20/2010	3	5	28	979	9	B	85	56.4295	9.76429	12.4287

SUBJECTIVE COLOR

Date	Batch	Day	Order	Panelist	Rand	Trt	Patty	LeanColor	Pdis	BrDis	Specks
2/1/2010	1	0	1	CHRISLY	102	1	A	4	0	0	0
2/1/2010	1	0	1	TABS	102	1	A	4	0	0	0
2/1/2010	1	0	2	CHRISLY	120	1	B	4	0	0	0
2/1/2010	1	0	2	TABS	120	1	B	4	0	0	0
2/2/2010	1	1	4	SHANNON	640	1	B	5	10	5	0
2/2/2010	1	1	4	SARAH	640	1	B	5	0	0	.
2/2/2010	1	1	4	TABS	640	1	B	4	0	0	0
2/2/2010	1	1	17	SHANNON	593	1	A	6	0	0	0
2/2/2010	1	1	17	SARAH	593	1	A	5	0	0	.
2/2/2010	1	1	17	TABS	593	1	A	4	0	0	0
2/4/2010	1	3	12	TABS	780	1	A	5	70	3	0
2/4/2010	1	3	12	SARAH	780	1	A	5	90	4	.
2/4/2010	1	3	12	CHRISLY	780	1	A	5	80	4	0
2/4/2010	1	3	13	TABS	250	1	B	4	40	3	0
2/4/2010	1	3	13	SARAH	250	1	B	5	70	4	.
2/4/2010	1	3	13	CHRISLY	250	1	B	5	80	3	0
2/6/2010	1	5	12	SHANNON	274	1	A	5	70	3	0
2/6/2010	1	5	12	TABS	274	1	A	0	100	3	0
2/6/2010	1	5	12	SARAH	274	1	A	5	80	3	.
2/6/2010	1	5	21	SHANNON	641	1	B	5	80	3	0
2/6/2010	1	5	21	TABS	641	1	B	5	90	3	0
2/6/2010	1	5	21	SARAH	641	1	B	6	80	3	.
2/8/2010	2	0	9	SARAH	257	1	A	6	0	0	.
2/8/2010	2	0	9	TABS	257	1	A	5	0	0	1
2/8/2010	2	0	9	SHANNON	257	1	A	5	0	0	0
2/8/2010	2	0	10	SARAH	559	1	B	7	0	0	.
2/8/2010	2	0	10	TABS	559	1	B	5	0	0	0
2/8/2010	2	0	10	SHANNON	559	1	B	6	0	0	0
2/9/2010	2	1	17	TABS	470	1	A	5	10	2	3

2/9/2010	2	1	17	SHANNON	470	1	A	5	10	2	1
2/9/2010	2	1	17	CHRISLY	470	1	A	6	0	0	0
2/9/2010	2	1	23	TABS	724	1	B	6	0	0	0
2/9/2010	2	1	23	SHANNON	724	1	B	6	0	0	0
2/9/2010	2	1	23	CHRISLY	724	1	B	6	0	0	2
2/11/2010	2	3	2	TABS	925	1	B	5	30	3	0
2/11/2010	2	3	2	CHRISLY	925	1	B	5	20	3	0
2/11/2010	2	3	28	TABS	518	1	A	5	20	3	0
2/11/2010	2	3	28	CHRISLY	518	1	A	5	0	0	0
2/13/2010	2	5	5	TABS	654	1	B	5	80	3	0
2/13/2010	2	5	5	CHRISLY	654	1	B	5	90	4	0
2/13/2010	2	5	5	SHANNON	654	1	B	5	80	3	0
2/13/2010	2	5	17	TABS	199	1	A	6	60	3	0
2/13/2010	2	5	17	CHRISLY	199	1	A	5	40	3	0
2/13/2010	2	5	17	SHANNON	199	1	A	5	30	3	0
2/15/2010	3	0	17	CHRISLY	612	1	A	5	0	0	0
2/15/2010	3	0	17	TABS	612	1	A	5	0	0	0
2/15/2010	3	0	18	CHRISLY	451	1	B	5	0	0	0
2/15/2010	3	0	18	TABS	451	1	B	4	0	0	0
2/16/2010	3	1	1	TABS	281	1	A	5	10	5	0
2/16/2010	3	1	1	CHRISLY	281	1	A	5	0	0	0
2/16/2010	3	1	1	SHANNON	281	1	A	6	0	0	0
2/16/2010	3	1	17	TABS	506	1	B	5	10	2	4
2/16/2010	3	1	17	CHRISLY	506	1	B	6	0	0	0
2/16/2010	3	1	17	SHANNON	506	1	B	6	0	0	0
2/18/2010	3	3	16	CHRISLY	653	1	A	6	0	0	0
2/18/2010	3	3	16	TABS	653	1	A	5	40	2	0
2/18/2010	3	3	16	SHANNON	653	1	A	5	0	0	0
2/18/2010	3	3	22	CHRISLY	462	1	B	5	0	0	0
2/18/2010	3	3	22	TABS	462	1	B	6	20	2	1
2/18/2010	3	3	22	SHANNON	462	1	B	5	10	2	0
2/20/2010	3	5	8	TABS	741	1	A	7	90	3	6
2/20/2010	3	5	8	SHANNON	741	1	A	5	80	3	0

2/20/2010	3	5	9	TABS	836	1	B	0	100	4		0
2/20/2010	3	5	9	SHANNON	836	1	B	8	80	3		0
2/1/2010	1	0	27	CHRISLY	417	2	A	4	0	0		0
2/1/2010	1	0	27	TABS	417	2	A	4	0	0		0
2/1/2010	1	0	28	CHRISLY	704	2	B	4	0	0		0
2/1/2010	1	0	28	TABS	704	2	B	4	0	0		0
2/2/2010	1	1	1	SHANNON	926	2	A	5	10	3		0
2/2/2010	1	1	1	SARAH	926	2	A	3	10	3	.	
2/2/2010	1	1	1	TABS	926	2	A	4	0	0		0
2/2/2010	1	1	25	SHANNON	553	2	B	5	0	0		0
2/2/2010	1	1	25	SARAH	553	2	B	5	0	0	.	
2/2/2010	1	1	25	TABS	553	2	B	4	0	0		0
2/4/2010	1	3	3	TABS	698	2	B	4	20	3		0
2/4/2010	1	3	3	SARAH	698	2	B	6	60	3	.	
2/4/2010	1	3	3	CHRISLY	698	2	B	5	60	3		0
2/4/2010	1	3	22	TABS	133	2	A	4	20	3		1
2/4/2010	1	3	22	SARAH	133	2	A	6	30	3	.	
2/4/2010	1	3	22	CHRISLY	133	2	A	5	20	4		0
2/6/2010	1	5	4	SHANNON	362	2	B	3	90	3		0
2/6/2010	1	5	4	TABS	362	2	B	5	90	3		1
2/6/2010	1	5	4	SARAH	362	2	B	3	70	4	.	
2/6/2010	1	5	24	SHANNON	588	2	A	5	30	3		0
2/6/2010	1	5	24	TABS	588	2	A	5	70	3		4
2/6/2010	1	5	24	SARAH	588	2	A	5	60	4	.	
2/8/2010	2	0	27	SARAH	457	2	A	6	0	0	.	
2/8/2010	2	0	27	TABS	457	2	A	6	0	0		0
2/8/2010	2	0	27	SHANNON	457	2	A	6	0	0		0
2/8/2010	2	0	28	SARAH	483	2	B	6	0	0	.	
2/8/2010	2	0	28	TABS	483	2	B	5	0	0		0
2/8/2010	2	0	28	SHANNON	483	2	B	6	0	0		0
2/9/2010	2	1	6	TABS	761	2	B	5	0	0		0
2/9/2010	2	1	6	SHANNON	761	2	B	5	0	0		0
2/9/2010	2	1	6	CHRISLY	761	2	B	6	0	0		0

2/9/2010	2	1	9	TABS	987	2	A	6	0	0	0
2/9/2010	2	1	9	SHANNON	987	2	A	5	0	0	0
2/9/2010	2	1	9	CHRISLY	987	2	A	5	0	0	0
2/11/2010	2	3	4	TABS	679	2	B	5	10	2	0
2/11/2010	2	3	4	CHRISLY	679	2	B	5	0	0	0
2/11/2010	2	3	25	TABS	77	2	A	6	10	3	4
2/11/2010	2	3	25	CHRISLY	77	2	A	6	0	0	0
2/13/2010	2	5	3	TABS	772	2	A	6	90	4	2
2/13/2010	2	5	3	CHRISLY	772	2	A	5	80	3	0
2/13/2010	2	5	3	SHANNON	772	2	A	5	50	3	0
2/13/2010	2	5	10	TABS	177	2	B	7	70	4	0
2/13/2010	2	5	10	CHRISLY	177	2	B	5	70	4	0
2/13/2010	2	5	10	SHANNON	177	2	B	5	70	3	0
2/15/2010	3	0	7	CHRISLY	193	2	A	5	0	0	0
2/15/2010	3	0	7	TABS	193	2	A	5	0	0	0
2/15/2010	3	0	8	CHRISLY	989	2	B	5	0	0	0
2/15/2010	3	0	8	TABS	989	2	B	5	0	0	0
2/16/2010	3	1	19	TABS	608	2	B	5	0	0	4
2/16/2010	3	1	19	CHRISLY	608	2	B	6	0	0	0
2/16/2010	3	1	19	SHANNON	608	2	B	5	0	0	1
2/16/2010	3	1	26	TABS	64	2	A	5	0	0	3
2/16/2010	3	1	26	CHRISLY	64	2	A	6	0	0	0
2/16/2010	3	1	26	SHANNON	64	2	A	5	10	3	0
2/18/2010	3	3	12	CHRISLY	841	2	A	5	0	0	0
2/18/2010	3	3	12	TABS	841	2	A	6	30	2	0
2/18/2010	3	3	12	SHANNON	841	2	A	6	0	0	0
2/18/2010	3	3	25	CHRISLY	522	2	B	5	0	0	0
2/18/2010	3	3	25	TABS	522	2	B	6	10	2	3
2/18/2010	3	3	25	SHANNON	522	2	B	5	10	2	0
2/20/2010	3	5	19	TABS	968	2	B	7	70	4	3
2/20/2010	3	5	19	SHANNON	968	2	B	5	70	3	0
2/20/2010	3	5	24	TABS	607	2	A	5	50	2	4
2/20/2010	3	5	24	SHANNON	607	2	A	5	10	3	0

2/1/2010	1	0	13	CHRISLY	227	3	A	4	0	0		0
2/1/2010	1	0	13	TABS	227	3	A	4	0	0		0
2/1/2010	1	0	14	CHRISLY	551	3	B	4	0	0		0
2/1/2010	1	0	14	TABS	551	3	B	4	0	0		0
2/2/2010	1	1	2	SHANNON	855	3	B	5	10	2		0
2/2/2010	1	1	2	SARAH	855	3	B	5	0	0	.	
2/2/2010	1	1	2	TABS	855	3	B	5	0	0		1
2/2/2010	1	1	12	SHANNON	512	3	A	6	0	0		0
2/2/2010	1	1	12	SARAH	512	3	A	5	10	0	.	
2/2/2010	1	1	12	TABS	512	3	A	5	0	0		0
2/4/2010	1	3	16	TABS	907	3	A	5	30	3		0
2/4/2010	1	3	16	SARAH	907	3	A	6	20	4	.	
2/4/2010	1	3	16	CHRISLY	907	3	A	5	60	3		0
2/4/2010	1	3	26	TABS	24	3	B	5	20	4		0
2/4/2010	1	3	26	SARAH	24	3	B	6	30	3	.	
2/4/2010	1	3	26	CHRISLY	24	3	B	6	60	4		0
2/6/2010	1	5	8	SHANNON	520	3	A	5	70	3		0
2/6/2010	1	5	8	TABS	520	3	A	5	80	3		1
2/6/2010	1	5	8	SARAH	520	3	A	6	90	4	.	
2/6/2010	1	5	28	SHANNON	959	3	B	5	40	3		0
2/6/2010	1	5	28	TABS	959	3	B	5	70	3		6
2/6/2010	1	5	28	SARAH	959	3	B	5	70	4	.	
2/8/2010	2	0	19	SARAH	963	3	A	6	0	0	.	
2/8/2010	2	0	19	TABS	963	3	A	6	0	0		0
2/8/2010	2	0	19	SHANNON	963	3	A	6	0	0		0
2/8/2010	2	0	20	SARAH	824	3	B	7	0	0	.	
2/8/2010	2	0	20	TABS	824	3	B	6	0	0		0
2/8/2010	2	0	20	SHANNON	824	3	B	6	0	0		0
2/9/2010	2	1	12	TABS	740	3	A	6	0	0		0
2/9/2010	2	1	12	SHANNON	740	3	A	6	0	0		0
2/9/2010	2	1	12	CHRISLY	740	3	A	6	0	0		0
2/9/2010	2	1	26	TABS	577	3	B	5	0	0		0
2/9/2010	2	1	26	SHANNON	577	3	B	6	0	0		0

2/9/2010	2	1	26	CHRISLY	577	3	B	6	0	0	0
2/11/2010	2	3	18	TABS	127	3	B	5	0	0	0
2/11/2010	2	3	18	CHRISLY	127	3	B	5	0	0	0
2/11/2010	2	3	24	TABS	345	3	A	5	30	3	0
2/11/2010	2	3	24	CHRISLY	345	3	A	5	0	0	0
2/13/2010	2	5	16	TABS	630	3	B	6	70	3	0
2/13/2010	2	5	16	CHRISLY	630	3	B	5	70	3	0
2/13/2010	2	5	16	SHANNON	630	3	B	8	80	3	0
2/13/2010	2	5	19	TABS	194	3	A	7	90	3	0
2/13/2010	2	5	19	CHRISLY	194	3	A	5	60	3	0
2/13/2010	2	5	19	SHANNON	194	3	A	5	70	3	0
2/15/2010	3	0	19	CHRISLY	965	3	A	5	0	0	0
2/15/2010	3	0	19	TABS	965	3	A	5	0	0	0
2/15/2010	3	0	20	CHRISLY	888	3	B	5	0	0	0
2/15/2010	3	0	20	TABS	888	3	B	5	0	0	0
2/16/2010	3	1	21	TABS	666	3	B	5	10	3	11
2/16/2010	3	1	21	CHRISLY	666	3	B	5	0	0	0
2/16/2010	3	1	21	SHANNON	666	3	B	6	0	0	0
2/16/2010	3	1	28	TABS	56	3	A	4	0	0	6
2/16/2010	3	1	28	CHRISLY	56	3	A	5	0	0	0
2/16/2010	3	1	28	SHANNON	56	3	A	6	0	0	0
2/18/2010	3	3	4	CHRISLY	283	3	B	5	0	0	0
2/18/2010	3	3	4	TABS	283	3	B	5	30	2	0
2/18/2010	3	3	4	SHANNON	283	3	B	5	10	2	0
2/18/2010	3	3	28	CHRISLY	637	3	A	6	0	0	0
2/18/2010	3	3	28	TABS	637	3	A	6	10	3	0
2/18/2010	3	3	28	SHANNON	637	3	A	5	0	0	0
2/20/2010	3	5	10	TABS	749	3	B	5	10	2	0
2/20/2010	3	5	10	SHANNON	749	3	B	4	0	0	0
2/20/2010	3	5	23	TABS	364	3	A	5	80	3	3
2/20/2010	3	5	23	SHANNON	364	3	A	8	80	3	0
2/1/2010	1	0	7	CHRISLY	739	4	A	4	0	0	8
2/1/2010	1	0	7	TABS	739	4	A	4	0	0	17

2/1/2010	1	0	8	CHRISLY	792	4	B	4	0	0	13
2/1/2010	1	0	8	TABS	792	4	B	4	0	0	21
2/2/2010	1	1	15	SHANNON	847	4	A	6	10	2	21
2/2/2010	1	1	15	SARAH	847	4	A	5	0	0	.
2/2/2010	1	1	15	TABS	847	4	A	4	0	0	17
2/2/2010	1	1	27	SHANNON	922	4	B	5	10	3	8
2/2/2010	1	1	27	SARAH	922	4	B	6	10	4	.
2/2/2010	1	1	27	TABS	922	4	B	5	0	0	9
2/4/2010	1	3	11	TABS	338	4	A	4	20	3	17
2/4/2010	1	3	11	SARAH	338	4	A	6	10	2	.
2/4/2010	1	3	11	CHRISLY	338	4	A	6	30	3	5
2/4/2010	1	3	19	TABS	511	4	B	4	30	3	13
2/4/2010	1	3	19	SARAH	511	4	B	6	50	3	.
2/4/2010	1	3	19	CHRISLY	511	4	B	4	40	4	10
2/6/2010	1	5	1	SHANNON	771	4	B	6	80	4	19
2/6/2010	1	5	1	TABS	771	4	B	5	90	4	13
2/6/2010	1	5	1	SARAH	771	4	B	5	80	3	.
2/6/2010	1	5	3	SHANNON	592	4	A	3	80	3	13
2/6/2010	1	5	3	TABS	592	4	A	5	90	4	19
2/6/2010	1	5	3	SARAH	592	4	A	5	80	4	.
2/8/2010	2	0	3	SARAH	115	4	A	6	0	0	.
2/8/2010	2	0	3	TABS	115	4	A	6	0	0	20
2/8/2010	2	0	3	SHANNON	115	4	A	6	0	0	14
2/8/2010	2	0	4	SARAH	628	4	B	6	0	0	.
2/8/2010	2	0	4	TABS	628	4	B	6	0	0	23
2/8/2010	2	0	4	SHANNON	628	4	B	6	0	0	12
2/9/2010	2	1	8	TABS	395	4	B	5	0	0	18
2/9/2010	2	1	8	SHANNON	395	4	B	5	0	0	19
2/9/2010	2	1	8	CHRISLY	395	4	B	5	0	0	10
2/9/2010	2	1	13	TABS	682	4	A	5	10	3	23
2/9/2010	2	1	13	SHANNON	682	4	A	5	0	0	18
2/9/2010	2	1	13	CHRISLY	682	4	A	5	0	0	16
2/11/2010	2	3	7	TABS	696	4	A	4	10	3	25

2/11/2010	2	3	7	CHRISLY	696	4	A	6	10	3	13
2/11/2010	2	3	12	TABS	224	4	B	5	20	3	17
2/11/2010	2	3	12	CHRISLY	224	4	B	5	20	3	13
2/13/2010	2	5	15	TABS	667	4	B	7	80	3	17
2/13/2010	2	5	15	CHRISLY	667	4	B	5	70	3	19
2/13/2010	2	5	15	SHANNON	667	4	B	5	80	3	17
2/13/2010	2	5	22	TABS	294	4	A	6	80	3	31
2/13/2010	2	5	22	CHRISLY	294	4	A	5	40	3	17
2/13/2010	2	5	22	SHANNON	294	4	A	5	40	3	15
2/15/2010	3	0	13	CHRISLY	81	4	A	5	0	0	13
2/15/2010	3	0	13	TABS	81	4	A	5	0	0	15
2/15/2010	3	0	14	CHRISLY	918	4	B	5	0	0	16
2/15/2010	3	0	14	TABS	918	4	B	5	0	0	28
2/16/2010	3	1	10	TABS	48	4	A	4	10	3	29
2/16/2010	3	1	10	CHRISLY	48	4	A	4	0	0	20
2/16/2010	3	1	10	SHANNON	48	4	A	5	0	0	13
2/16/2010	3	1	22	TABS	482	4	B	4	10	3	28
2/16/2010	3	1	22	CHRISLY	482	4	B	4	0	0	16
2/16/2010	3	1	22	SHANNON	482	4	B	6	0	0	24
2/18/2010	3	3	14	CHRISLY	216	4	B	5	20	3	23
2/18/2010	3	3	14	TABS	216	4	B	6	30	3	19
2/18/2010	3	3	14	SHANNON	216	4	B	6	10	3	18
2/18/2010	3	3	19	CHRISLY	295	4	A	5	0	0	20
2/18/2010	3	3	19	TABS	295	4	A	6	40	3	17
2/18/2010	3	3	19	SHANNON	295	4	A	6	10	3	16
2/20/2010	3	5	20	TABS	374	4	A	5	50	3	26
2/20/2010	3	5	20	SHANNON	374	4	A	5	50	3	17
2/20/2010	3	5	22	TABS	714	4	B	4	40	2	21
2/20/2010	3	5	22	SHANNON	714	4	B	5	20	3	17
2/1/2010	1	0	5	CHRISLY	220	5	A	3	0	0	0
2/1/2010	1	0	5	TABS	220	5	A	4	0	0	0
2/1/2010	1	0	6	CHRISLY	567	5	B	3	0	0	0
2/1/2010	1	0	6	TABS	567	5	B	4	0	0	1

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2/2/2010	1	1	21	SARAH	138	5	B	5	10	2	.	
2/2/2010	1	1	21	TABS	138	5	B	5	0	0		0
2/2/2010	1	1	24	SHANNON	779	5	A	5	0	0		0
2/2/2010	1	1	24	SARAH	779	5	A	5	10	3	.	
2/2/2010	1	1	24	TABS	779	5	A	4	0	0		1
2/4/2010	1	3	4	TABS	238	5	B	4	20	3		0
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2/4/2010	1	3	4	CHRISLY	238	5	B	5	60	3		0
2/4/2010	1	3	8	TABS	846	5	A	4	30	4		0
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2/4/2010	1	3	8	CHRISLY	846	5	A	3	60	3		0
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2/6/2010	1	5	9	SARAH	867	5	B	5	80	4	.	
2/6/2010	1	5	19	SHANNON	269	5	A	5	70	3		0
2/6/2010	1	5	19	TABS	269	5	A	5	80	3		4
2/6/2010	1	5	19	SARAH	269	5	A	5	70	4	.	
2/8/2010	2	0	11	SARAH	604	5	A	7	0	0	.	
2/8/2010	2	0	11	TABS	604	5	A	5	0	0		0
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2/8/2010	2	0	12	TABS	947	5	B	6	0	0		1
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2/9/2010	2	1	20	TABS	869	5	B	5	10	2		0
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2/9/2010	2	1	20	CHRISLY	869	5	B	6	0	0		0
2/9/2010	2	1	22	TABS	268	5	A	5	10	4		0
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2/9/2010	2	1	22	CHRISLY	268	5	A	5	0	0		0
2/11/2010	2	3	16	TABS	124	5	A	5	10	3		1
2/11/2010	2	3	16	CHRISLY	124	5	A	6	0	0		0
2/11/2010	2	3	22	TABS	99	5	B	5	10	3		2

2/11/2010	2	3	22	CHRISLY	99	5	B	5	0	0	0	
2/13/2010	2	5	1	TABS	931	5	B	0	100	5	1	
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2/13/2010	2	5	1	SHANNON	931	5	B	5	80	3	0	
2/13/2010	2	5	21	TABS	240	5	A	6	90	3	2	
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2/13/2010	2	5	21	SHANNON	240	5	A	5	50	3	0	
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2/15/2010	3	0	3	TABS	16	5	A	5	0	0	0	
2/15/2010	3	0	4	CHRISLY	665	5	B	5	0	0	0	
2/15/2010	3	0	4	TABS	665	5	B	5	0	0	0	
2/16/2010	3	1	4	TABS	966	5	A	5	10	4	0	
2/16/2010	3	1	4	CHRISLY	966	5	A	6	0	0	0	
2/16/2010	3	1	4	SHANNON	966	5	A	5	0	0	0	
2/16/2010	3	1	13	TABS	396	5	B	5	10	2	3	
2/16/2010	3	1	13	CHRISLY	396	5	B	5	0	0	0	
2/16/2010	3	1	13	SHANNON	396	5	B	5	0	0	0	
2/18/2010	3	3	9	CHRISLY	676	5	B	4	20	4	0	
2/18/2010	3	3	9	TABS	676	5	B	5	50	2	3	
2/18/2010	3	3	9	SHANNON	676	5	B	5	20	2	1	
2/18/2010	3	3	13	CHRISLY	585	5	A	4	20	3	0	
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2/18/2010	3	3	13	SHANNON	585	5	A	5	30	3	0	
2/20/2010	3	5	3	TABS	550	5	B	5	70	3	1	
2/20/2010	3	5	3	SHANNON	550	5	B	5	40	3	0	
2/20/2010	3	5	17	TABS	678	5	A	6	60	3	0	
2/20/2010	3	5	17	SHANNON	678	5	A	5	20	3	0	
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2/1/2010	1	0	11	TABS	38	6	A	4	0	0	0	
2/1/2010	1	0	12	CHRISLY	517	6	B	4	0	0	0	
2/1/2010	1	0	12	TABS	517	6	B	4	0	0	0	
2/2/2010	1	1	6	SHANNON	785	6	A	5	10	3	1	
2/2/2010	1	1	6	SARAH	785	6	A	4	20	4	.	

2/2/2010	1	1	6	TABS	785	6	A	4	0	0		1
2/2/2010	1	1	14	SHANNON	606	6	B	5	10	2		0
2/2/2010	1	1	14	SARAH	606	6	B	5	10	2	.	
2/2/2010	1	1	14	TABS	606	6	B	4	0	0		1
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2/4/2010	1	3	1	CHRISLY	928	6	B	4	10	4		0
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2/4/2010	1	3	5	CHRISLY	887	6	A	5	40	3		0
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2/6/2010	1	5	17	SHANNON	63	6	B	5	50	3		0
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2/6/2010	1	5	17	SARAH	63	6	B	4	60	3	.	
2/8/2010	2	0	7	SARAH	435	6	A	6	0	0	.	
2/8/2010	2	0	7	TABS	435	6	A	5	0	0		3
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2/8/2010	2	0	8	TABS	304	6	B	5	0	0		0
2/8/2010	2	0	8	SHANNON	304	6	B	5	0	0		0
2/9/2010	2	1	15	TABS	352	6	A	5	10	3		1
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2/9/2010	2	1	16	TABS	321	6	B	4	10	3		6
2/9/2010	2	1	16	SHANNON	321	6	B	5	30	3		2
2/9/2010	2	1	16	CHRISLY	321	6	B	5	0	0		0
2/11/2010	2	3	5	TABS	516	6	A	5	20	4		0
2/11/2010	2	3	5	CHRISLY	516	6	A	5	70	3		0
2/11/2010	2	3	26	TABS	67	6	B	4	70	3		0
2/11/2010	2	3	26	CHRISLY	67	6	B	4	40	3		0
2/13/2010	2	5	2	TABS	697	6	A	5	90	5		0

2/13/2010	2	5	2	CHRISLY	697	6	A	0	100	4	0
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2/13/2010	2	5	27	TABS	353	6	B	5	80	3	7
2/13/2010	2	5	27	CHRISLY	353	6	B	5	60	3	0
2/13/2010	2	5	27	SHANNON	353	6	B	5	70	3	0
2/15/2010	3	0	25	CHRISLY	104	6	A	5	0	0	0
2/15/2010	3	0	25	TABS	104	6	A	4	0	0	0
2/15/2010	3	0	26	CHRISLY	923	6	B	5	0	0	0
2/15/2010	3	0	26	TABS	923	6	B	5	0	0	0
2/16/2010	3	1	8	TABS	535	6	B	5	10	5	3
2/16/2010	3	1	8	CHRISLY	535	6	B	5	10	4	0
2/16/2010	3	1	8	SHANNON	535	6	B	5	10	3	0
2/16/2010	3	1	15	TABS	86	6	A	4	10	4	0
2/16/2010	3	1	15	CHRISLY	86	6	A	5	0	0	0
2/16/2010	3	1	15	SHANNON	86	6	A	5	10	3	0
2/18/2010	3	3	8	CHRISLY	181	6	B	4	30	3	0
2/18/2010	3	3	8	TABS	181	6	B	5	50	3	4
2/18/2010	3	3	8	SHANNON	181	6	B	5	10	4	0
2/18/2010	3	3	11	CHRISLY	436	6	A	4	30	3	0
2/18/2010	3	3	11	TABS	436	6	A	4	40	3	3
2/18/2010	3	3	11	SHANNON	436	6	A	5	20	3	1
2/20/2010	3	5	7	TABS	988	6	B	7	90	3	4
2/20/2010	3	5	7	SHANNON	988	6	B	8	80	3	0
2/20/2010	3	5	21	TABS	833	6	A	5	90	3	0
2/20/2010	3	5	21	SHANNON	833	6	A	5	90	3	0
2/1/2010	1	0	17	CHRISLY	943	7	A	3	0	0	37
2/1/2010	1	0	17	TABS	943	7	A	3	0	0	47
2/1/2010	1	0	18	CHRISLY	745	7	B	3	0	0	39
2/1/2010	1	0	18	TABS	745	7	B	4	0	0	34
2/2/2010	1	1	5	SHANNON	874	7	B	3	20	5	64
2/2/2010	1	1	5	SARAH	874	7	B	3	10	3	.
2/2/2010	1	1	5	TABS	874	7	B	3	0	0	52
2/2/2010	1	1	23	SHANNON	316	7	A	3	10	4	36

2/2/2010	1	1	23	SARAH	316	7	A	3	0	0	.	
2/2/2010	1	1	23	TABS	316	7	A	4	10	5		61
2/4/2010	1	3	2	TABS	695	7	B	5	50	5		46
2/4/2010	1	3	2	SARAH	695	7	B	5	80	4	.	
2/4/2010	1	3	2	CHRISLY	695	7	B	5	60	4		24
2/4/2010	1	3	6	TABS	354	7	A	4	50	5		59
2/4/2010	1	3	6	SARAH	354	7	A	5	70	4	.	
2/4/2010	1	3	6	CHRISLY	354	7	A	6	80	4		30
2/6/2010	1	5	18	SHANNON	929	7	A	3	90	3		32
2/6/2010	1	5	18	TABS	929	7	A	0	100	5		30
2/6/2010	1	5	18	SARAH	929	7	A	0	100	4	.	
2/6/2010	1	5	22	SHANNON	540	7	B	3	90	3		40
2/6/2010	1	5	22	TABS	540	7	B	5	90	5		61
2/6/2010	1	5	22	SARAH	540	7	B	4	90	4	.	
2/8/2010	2	0	1	SARAH	241	7	A	7	0	0	.	
2/8/2010	2	0	1	TABS	241	7	A	5	0	0		30
2/8/2010	2	0	1	SHANNON	241	7	A	5	0	0		41
2/8/2010	2	0	2	SARAH	49	7	B	7	0	0	.	
2/8/2010	2	0	2	TABS	49	7	B	5	0	0		42
2/8/2010	2	0	2	SHANNON	49	7	B	5	0	0		34
2/9/2010	2	1	1	TABS	564	7	B	5	10	2		69
2/9/2010	2	1	1	SHANNON	564	7	B	6	20	2		48
2/9/2010	2	1	1	CHRISLY	564	7	B	4	20	3		34
2/9/2010	2	1	14	TABS	108	7	A	5	10	2		64
2/9/2010	2	1	14	SHANNON	108	7	A	5	20	2		38
2/9/2010	2	1	14	CHRISLY	108	7	A	5	20	2		30
2/11/2010	2	3	21	TABS	112	7	A	5	90	3		67
2/11/2010	2	3	21	CHRISLY	112	7	A	5	70	4		30
2/11/2010	2	3	27	TABS	652	7	B	0	100	4		34
2/11/2010	2	3	27	CHRISLY	652	7	B	5	90	4		31
2/13/2010	2	5	13	TABS	215	7	B	0	100	4		49
2/13/2010	2	5	13	CHRISLY	215	7	B	0	100	4		23
2/13/2010	2	5	13	SHANNON	215	7	B	0	100	4		36

2/13/2010	2	5	28	TABS	838	7	A	0	100	4	36
2/13/2010	2	5	28	CHRISLY	838	7	A	0	100	4	28
2/13/2010	2	5	28	SHANNON	838	7	A	0	100	4	36
2/15/2010	3	0	11	CHRISLY	119	7	A	4	0	0	55
2/15/2010	3	0	11	TABS	119	7	A	4	0	0	52
2/15/2010	3	0	12	CHRISLY	61	7	B	4	0	0	51
2/15/2010	3	0	12	TABS	61	7	B	4	0	0	55
2/16/2010	3	1	2	TABS	763	7	B	4	10	5	63
2/16/2010	3	1	2	CHRISLY	763	7	B	3	10	3	64
2/16/2010	3	1	2	SHANNON	763	7	B	5	30	3	46
2/16/2010	3	1	24	TABS	664	7	A	4	40	5	56
2/16/2010	3	1	24	CHRISLY	664	7	A	4	10	3	73
2/16/2010	3	1	24	SHANNON	664	7	A	5	30	3	58
2/18/2010	3	3	18	CHRISLY	150	7	A	3	60	3	35
2/18/2010	3	3	18	TABS	150	7	A	4	80	5	61
2/18/2010	3	3	18	SHANNON	150	7	A	5	70	3	55
2/18/2010	3	3	21	CHRISLY	359	7	B	4	70	4	44
2/18/2010	3	3	21	TABS	359	7	B	5	90	4	41
2/18/2010	3	3	21	SHANNON	359	7	B	5	70	4	40
2/20/2010	3	5	13	TABS	386	7	B	3	90	4	63
2/20/2010	3	5	13	SHANNON	386	7	B	5	80	4	36
2/20/2010	3	5	15	TABS	379	7	A	0	100	4	61
2/20/2010	3	5	15	SHANNON	379	7	A	5	90	4	19
2/1/2010	1	0	15	CHRISLY	418	8	A	3	0	0	72
2/1/2010	1	0	15	TABS	418	8	A	3	0	0	55
2/1/2010	1	0	16	CHRISLY	223	8	B	3	0	0	54
2/1/2010	1	0	16	TABS	223	8	B	3	0	0	66
2/2/2010	1	1	8	SHANNON	447	8	B	3	10	5	85
2/2/2010	1	1	8	SARAH	447	8	B	3	20	3	.
2/2/2010	1	1	8	TABS	447	8	B	3	10	5	75
2/2/2010	1	1	13	SHANNON	22	8	A	3	30	5	71
2/2/2010	1	1	13	SARAH	22	8	A	4	30	3	.
2/2/2010	1	1	13	TABS	22	8	A	3	10	5	77

2/4/2010	1	3	10	TABS	157	8	A	3	70	5	102
2/4/2010	1	3	10	SARAH	157	8	A	3	80	3	.
2/4/2010	1	3	10	CHRISLY	157	8	A	4	80	4	32
2/4/2010	1	3	24	TABS	4	8	B	3	90	5	108
2/4/2010	1	3	24	SARAH	4	8	B	4	60	4	.
2/4/2010	1	3	24	CHRISLY	4	8	B	5	80	4	45
2/6/2010	1	5	14	SHANNON	805	8	A	2	90	5	56
2/6/2010	1	5	14	TABS	805	8	A	0	100	5	59
2/6/2010	1	5	14	SARAH	805	8	A	0	100	5	.
2/6/2010	1	5	26	SHANNON	440	8	B	3	80	5	73
2/6/2010	1	5	26	TABS	440	8	B	0	100	5	63
2/6/2010	1	5	26	SARAH	440	8	B	0	100	5	.
2/8/2010	2	0	13	SARAH	981	8	A	5	0	0	.
2/8/2010	2	0	13	TABS	981	8	A	5	0	0	86
2/8/2010	2	0	13	SHANNON	981	8	A	5	0	0	64
2/8/2010	2	0	14	SARAH	572	8	B	5	0	0	.
2/8/2010	2	0	14	TABS	572	8	B	5	0	0	80
2/8/2010	2	0	14	SHANNON	572	8	B	5	0	0	66
2/9/2010	2	1	11	TABS	198	8	B	3	50	3	72
2/9/2010	2	1	11	SHANNON	198	8	B	1	60	4	65
2/9/2010	2	1	11	CHRISLY	198	8	B	3	70	3	72
2/9/2010	2	1	28	TABS	584	8	A	5	60	4	77
2/9/2010	2	1	28	SHANNON	584	8	A	5	70	4	61
2/9/2010	2	1	28	CHRISLY	584	8	A	4	40	3	85
2/11/2010	2	3	8	TABS	821	8	B	0	100	4	86
2/11/2010	2	3	8	CHRISLY	821	8	B	0	100	4	79
2/11/2010	2	3	11	TABS	461	8	A	0	100	4	58
2/11/2010	2	3	11	CHRISLY	461	8	A	0	100	4	28
2/13/2010	2	5	6	TABS	207	8	B	0	100	4	66
2/13/2010	2	5	6	CHRISLY	207	8	B	0	100	4	30
2/13/2010	2	5	6	SHANNON	207	8	B	0	100	4	42
2/13/2010	2	5	18	TABS	781	8	A	0	100	5	90
2/13/2010	2	5	18	CHRISLY	781	8	A	0	100	4	63

2/13/2010	2	5	18	SHANNON	781	8	A	0	100	4	70	
2/15/2010	3	0	15	CHRISLY	677	8	A	3	0	0	74	
2/15/2010	3	0	15	TABS	677	8	A	3	0	0	80	
2/15/2010	3	0	16	CHRISLY	687	8	B	3	0	0	78	
2/15/2010	3	0	16	TABS	687	8	B	3	0	0	93	
2/16/2010	3	1	11	TABS	255	8	A	3	50	5	79	
2/16/2010	3	1	11	CHRISLY	255	8	A	3	20	3	83	
2/16/2010	3	1	11	SHANNON	255	8	A	5	50	4	70	
2/16/2010	3	1	12	TABS	889	8	B	3	50	5	99	
2/16/2010	3	1	12	CHRISLY	889	8	B	3	20	3	62	
2/16/2010	3	1	12	SHANNON	889	8	B	5	60	4	75	
2/18/2010	3	3	3	CHRISLY	866	8	A	3	80	4	72	
2/18/2010	3	3	3	TABS	866	8	A	3	90	4	75	
2/18/2010	3	3	3	SHANNON	866	8	A	3	90	4	70	
2/18/2010	3	3	26	CHRISLY	369	8	B	3	90	4	65	
2/18/2010	3	3	26	TABS	369	8	B	3	90	5	107	
2/18/2010	3	3	26	SHANNON	369	8	B	3	90	4	78	
2/20/2010	3	5	18	TABS	534	8	A	0	100	5	100	
2/20/2010	3	5	18	SHANNON	534	8	A	0	100	4	51	
2/20/2010	3	5	27	TABS	450	8	B	0	100	5	79	
2/20/2010	3	5	27	SHANNON	450	8	B	0	100	4	67	
2/1/2010	1	0	9	CHRISLY	2	9	A	3	0	0	25	
2/1/2010	1	0	9	TABS	2	9	A	4	0	0	32	
2/1/2010	1	0	10	CHRISLY	642	9	B	4	0	0	10	
2/1/2010	1	0	10	TABS	642	9	B	4	0	0	29	
2/2/2010	1	1	11	SHANNON	718	9	A	5	10	5	26	
2/2/2010	1	1	11	SARAH	718	9	A	3	10	3	.	
2/2/2010	1	1	11	TABS	718	9	A	3	10	5	39	
2/2/2010	1	1	22	SHANNON	236	9	B	5	10	3	25	
2/2/2010	1	1	22	SARAH	236	9	B	5	30	3	.	
2/2/2010	1	1	22	TABS	236	9	B	3	10	3	20	
2/4/2010	1	3	7	TABS	154	9	B	4	60	4	48	
2/4/2010	1	3	7	SARAH	154	9	B	5	50	3	.	

2/4/2010	1	3	7	CHRISLY	154	9	B	4	80	4		29
2/4/2010	1	3	23	TABS	777	9	A	5	50	5		52
2/4/2010	1	3	23	SARAH	777	9	A	5	70	3	.	
2/4/2010	1	3	23	CHRISLY	777	9	A	5	50	4		21
2/6/2010	1	5	13	SHANNON	917	9	B	3	80	3		26
2/6/2010	1	5	13	TABS	917	9	B	5	90	3		52
2/6/2010	1	5	13	SARAH	917	9	B	5	90	3	.	
2/6/2010	1	5	27	SHANNON	30	9	A	5	90	3		19
2/6/2010	1	5	27	TABS	30	9	A	0	100	5		29
2/6/2010	1	5	27	SARAH	30	9	A	5	90	4	.	
2/8/2010	2	0	23	SARAH	358	9	A	6	0	0	.	
2/8/2010	2	0	23	TABS	358	9	A	5	0	0		42
2/8/2010	2	0	23	SHANNON	358	9	A	5	0	0		34
2/8/2010	2	0	24	SARAH	8	9	B	6	0	0	.	
2/8/2010	2	0	24	TABS	8	9	B	5	0	0		30
2/8/2010	2	0	24	SHANNON	8	9	B	5	0	0		47
2/9/2010	2	1	2	TABS	496	9	A	6	10	3		41
2/9/2010	2	1	2	SHANNON	496	9	A	5	10	4		33
2/9/2010	2	1	2	CHRISLY	496	9	A	5	10	3		26
2/9/2010	2	1	25	TABS	668	9	B	5	10	4		39
2/9/2010	2	1	25	SHANNON	668	9	B	5	20	3		34
2/9/2010	2	1	25	CHRISLY	668	9	B	5	10	4		24
2/11/2010	2	3	10	TABS	188	9	B	5	70	3		28
2/11/2010	2	3	10	CHRISLY	188	9	B	5	80	3		22
2/11/2010	2	3	13	TABS	275	9	A	5	60	3		23
2/11/2010	2	3	13	CHRISLY	275	9	A	5	60	3		30
2/13/2010	2	5	4	TABS	611	9	A	0	100	4		46
2/13/2010	2	5	4	CHRISLY	611	9	A	0	100	4		22
2/13/2010	2	5	4	SHANNON	611	9	A	0	100	4		32
2/13/2010	2	5	23	TABS	912	9	B	0	100	5		32
2/13/2010	2	5	23	CHRISLY	912	9	B	0	100	4		24
2/13/2010	2	5	23	SHANNON	912	9	B	0	100	4		22
2/15/2010	3	0	9	CHRISLY	452	9	A	4	0	0		33

2/15/2010	3	0	9	TABS	452	9	A	4	0	0	50
2/15/2010	3	0	10	CHRISLY	560	9	B	4	0	0	42
2/15/2010	3	0	10	TABS	560	9	B	4	0	0	35
2/16/2010	3	1	3	TABS	919	9	A	4	10	4	44
2/16/2010	3	1	3	CHRISLY	919	9	A	4	10	3	39
2/16/2010	3	1	3	SHANNON	919	9	A	5	20	3	46
2/16/2010	3	1	6	TABS	613	9	B	4	10	5	30
2/16/2010	3	1	6	CHRISLY	613	9	B	4	10	4	28
2/16/2010	3	1	6	SHANNON	613	9	B	5	10	4	40
2/18/2010	3	3	6	CHRISLY	972	9	A	4	20	3	36
2/18/2010	3	3	6	TABS	972	9	A	4	50	4	40
2/18/2010	3	3	6	SHANNON	972	9	A	5	20	3	36
2/18/2010	3	3	7	CHRISLY	423	9	B	4	20	4	22
2/18/2010	3	3	7	TABS	423	9	B	4	50	4	38
2/18/2010	3	3	7	SHANNON	423	9	B	5	20	4	38
2/20/2010	3	5	25	TABS	429	9	A	0	100	4	53
2/20/2010	3	5	25	SHANNON	429	9	A	5	80	4	19
2/20/2010	3	5	28	TABS	979	9	B	6	90	4	32
2/20/2010	3	5	28	SHANNON	979	9	B	5	90	4	24
2/1/2010	1	0	19	CHRISLY	263	10	A	3	0	0	44
2/1/2010	1	0	19	TABS	263	10	A	3	0	0	63
2/1/2010	1	0	20	CHRISLY	113	10	B	3	0	0	30
2/1/2010	1	0	20	TABS	113	10	B	3	0	0	46
2/2/2010	1	1	18	SHANNON	234	10	B	3	30	4	51
2/2/2010	1	1	18	SARAH	234	10	B	3	20	3	.
2/2/2010	1	1	18	TABS	234	10	B	3	0	0	49
2/2/2010	1	1	26	SHANNON	144	10	A	5	20	5	39
2/2/2010	1	1	26	SARAH	144	10	A	4	20	4	.
2/2/2010	1	1	26	TABS	144	10	A	3	10	5	75
2/4/2010	1	3	15	TABS	139	10	B	4	90	5	52
2/4/2010	1	3	15	SARAH	139	10	B	3	40	3	.
2/4/2010	1	3	15	CHRISLY	139	10	B	4	80	4	40
2/4/2010	1	3	28	TABS	502	10	A	3	80	5	79

2/4/2010	1	3	28	SARAH	502	10	A	4	80	3	.	
2/4/2010	1	3	28	CHRISLY	502	10	A	5	80	4		29
2/6/2010	1	5	5	SHANNON	759	10	A	1	90	5		17
2/6/2010	1	5	5	TABS	759	10	A	0	100	5		60
2/6/2010	1	5	5	SARAH	759	10	A	0	100	4	.	
2/6/2010	1	5	15	SHANNON	967	10	B	0	100	5		38
2/6/2010	1	5	15	TABS	967	10	B	0	100	5		39
2/6/2010	1	5	15	SARAH	967	10	B	5	90	4	.	
2/8/2010	2	0	5	SARAH	961	10	A	5	0	0	.	
2/8/2010	2	0	5	TABS	961	10	A	5	0	0		49
2/8/2010	2	0	5	SHANNON	961	10	A	4	0	0		50
2/8/2010	2	0	6	SARAH	242	10	B	6	0	0	.	
2/8/2010	2	0	6	TABS	242	10	B	5	0	0		67
2/8/2010	2	0	6	SHANNON	242	10	B	4	0	0		55
2/9/2010	2	1	4	TABS	891	10	A	4	20	5		43
2/9/2010	2	1	4	SHANNON	891	10	A	3	30	4		43
2/9/2010	2	1	4	CHRISLY	891	10	A	5	30	3		40
2/9/2010	2	1	24	TABS	726	10	B	5	40	3		65
2/9/2010	2	1	24	SHANNON	726	10	B	1	70	3		63
2/9/2010	2	1	24	CHRISLY	726	10	B	3	50	4		40
2/11/2010	2	3	3	TABS	587	10	B	0	100	4		35
2/11/2010	2	3	3	CHRISLY	587	10	B	0	100	4		45
2/11/2010	2	3	9	TABS	798	10	A	5	80	3		54
2/11/2010	2	3	9	CHRISLY	798	10	A	5	80	3		45
2/13/2010	2	5	8	TABS	214	10	B	5	90	5		72
2/13/2010	2	5	8	CHRISLY	214	10	B	0	100	3		38
2/13/2010	2	5	8	SHANNON	214	10	B	1	90	4		64
2/13/2010	2	5	24	TABS	720	10	A	0	100	5		41
2/13/2010	2	5	24	CHRISLY	720	10	A	0	100	4		58
2/13/2010	2	5	24	SHANNON	720	10	A	0	100	4		52
2/15/2010	3	0	23	CHRISLY	862	10	A	3	0	0		68
2/15/2010	3	0	23	TABS	862	10	A	4	0	0		65
2/15/2010	3	0	24	CHRISLY	497	10	B	3	0	0		72

2/15/2010	3	0	24	TABS	497	10	B	3	0	0	82
2/16/2010	3	1	7	TABS	681	10	B	3	40	5	67
2/16/2010	3	1	7	CHRISLY	681	10	B	4	20	3	42
2/16/2010	3	1	7	SHANNON	681	10	B	5	30	4	68
2/16/2010	3	1	16	TABS	894	10	A	3	40	4	54
2/16/2010	3	1	16	CHRISLY	894	10	A	4	20	4	44
2/16/2010	3	1	16	SHANNON	894	10	A	5	20	4	52
2/18/2010	3	3	2	CHRISLY	327	10	B	3	70	4	54
2/18/2010	3	3	2	TABS	327	10	B	3	90	3	62
2/18/2010	3	3	2	SHANNON	327	10	B	3	90	4	69
2/18/2010	3	3	20	CHRISLY	911	10	A	3	80	3	75
2/18/2010	3	3	20	TABS	911	10	A	4	90	4	52
2/18/2010	3	3	20	SHANNON	911	10	A	3	80	4	50
2/20/2010	3	5	11	TABS	161	10	A	0	100	4	.
2/20/2010	3	5	11	SHANNON	161	10	A	0	100	4	45
2/20/2010	3	5	12	TABS	913	10	B	0	100	4	79
2/20/2010	3	5	12	SHANNON	913	10	B	0	100	4	69
2/1/2010	1	0	3	CHRISLY	254	11	A	4	0	0	3
2/1/2010	1	0	3	TABS	254	11	A	4	0	0	13
2/1/2010	1	0	4	CHRISLY	672	11	B	4	0	0	0
2/1/2010	1	0	4	TABS	672	11	B	4	0	0	10
2/2/2010	1	1	10	SHANNON	975	11	B	5	10	3	14
2/2/2010	1	1	10	SARAH	975	11	B	6	0	0	.
2/2/2010	1	1	10	TABS	975	11	B	4	0	0	20
2/2/2010	1	1	20	SHANNON	343	11	A	5	10	3	14
2/2/2010	1	1	20	SARAH	343	11	A	5	10	3	.
2/2/2010	1	1	20	TABS	343	11	A	4	0	0	14
2/4/2010	1	3	21	TABS	933	11	B	5	70	4	22
2/4/2010	1	3	21	SARAH	933	11	B	5	60	4	.
2/4/2010	1	3	21	CHRISLY	933	11	B	5	60	4	0
2/4/2010	1	3	25	TABS	98	11	A	5	30	3	32
2/4/2010	1	3	25	SARAH	98	11	A	5	60	3	.
2/4/2010	1	3	25	CHRISLY	98	11	A	5	70	3	0

2/6/2010	1	5	16	SHANNON	256	11	B	0	100	3	9
2/6/2010	1	5	16	TABS	256	11	B	0	100	4	13
2/6/2010	1	5	16	SARAH	256	11	B	6	90	4	.
2/6/2010	1	5	25	SHANNON	334	11	A	5	80	4	6
2/6/2010	1	5	25	TABS	334	11	A	0	100	4	18
2/6/2010	1	5	25	SARAH	334	11	A	0	100	4	.
2/8/2010	2	0	25	SARAH	881	11	A	6	0	0	.
2/8/2010	2	0	25	TABS	881	11	A	5	0	0	10
2/8/2010	2	0	25	SHANNON	881	11	A	5	0	0	9
2/8/2010	2	0	26	SARAH	169	11	B	6	0	0	.
2/8/2010	2	0	26	TABS	169	11	B	5	0	0	13
2/8/2010	2	0	26	SHANNON	169	11	B	6	0	0	10
2/9/2010	2	1	3	TABS	969	11	A	5	20	2	9
2/9/2010	2	1	3	SHANNON	969	11	A	5	20	2	18
2/9/2010	2	1	3	CHRISLY	969	11	A	6	0	0	10
2/9/2010	2	1	10	TABS	55	11	B	5	10	2	12
2/9/2010	2	1	10	SHANNON	55	11	B	5	10	2	20
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2/11/2010	2	3	19	CHRISLY	930	11	A	6	90	2	7
2/13/2010	2	5	7	TABS	692	11	A	0	100	4	22
2/13/2010	2	5	7	CHRISLY	692	11	A	0	100	4	0
2/13/2010	2	5	7	SHANNON	692	11	A	0	100	4	23
2/13/2010	2	5	25	TABS	162	11	B	0	100	4	34
2/13/2010	2	5	25	CHRISLY	162	11	B	0	100	4	10
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2/15/2010	3	0	2	TABS	228	11	B	5	0	0	26
2/16/2010	3	1	20	TABS	735	11	A	5	10	3	20

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2/18/2010	3	3	17	CHRISLY	50	11	B	5	60	4	30	
2/18/2010	3	3	17	TABS	50	11	B	5	80	3	35	
2/18/2010	3	3	17	SHANNON	50	11	B	5	60	3	24	
2/18/2010	3	3	23	CHRISLY	414	11	A	4	30	3	13	
2/18/2010	3	3	23	TABS	414	11	A	5	40	3	26	
2/18/2010	3	3	23	SHANNON	414	11	A	5	30	3	11	
2/20/2010	3	5	2	TABS	350	11	A	6	90	4	37	
2/20/2010	3	5	2	SHANNON	350	11	A	5	70	4	28	
2/20/2010	3	5	26	TABS	850	11	B	7	90	4	34	
2/20/2010	3	5	26	SHANNON	850	11	B	5	80	4	12	
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2/1/2010	1	0	24	CHRISLY	211	12	B	3	0	0	10	
2/1/2010	1	0	24	TABS	211	12	B	4	0	0	23	
2/2/2010	1	1	7	SHANNON	871	12	A	5	20	2	36	
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2/2/2010	1	1	19	TABS	237	12	B	3	0	0	29	
2/4/2010	1	3	14	TABS	325	12	B	5	80	4	40	
2/4/2010	1	3	14	SARAH	325	12	B	5	90	4	.	
2/4/2010	1	3	14	CHRISLY	325	12	B	6	90	4	15	
2/4/2010	1	3	27	TABS	818	12	A	5	50	4	71	
2/4/2010	1	3	27	SARAH	818	12	A	5	60	4	.	
2/4/2010	1	3	27	CHRISLY	818	12	A	6	60	4	7	
2/6/2010	1	5	10	SHANNON	554	12	A	0	100	4	38	
2/6/2010	1	5	10	TABS	554	12	A	0	100	4	38	

2/6/2010	1	5	10	SARAH	554	12	A	0	100	4	.	
2/6/2010	1	5	23	SHANNON	791	12	B	0	100	4		19
2/6/2010	1	5	23	TABS	791	12	B	0	100	4		42
2/6/2010	1	5	23	SARAH	791	12	B	0	100	4	.	
2/8/2010	2	0	17	SARAH	890	12	A	5	0	0	.	
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2/8/2010	2	0	17	SHANNON	890	12	A	5	0	0		27
2/8/2010	2	0	18	SARAH	15	12	B	6	0	0	.	
2/8/2010	2	0	18	TABS	15	12	B	5	0	0		10
2/8/2010	2	0	18	SHANNON	15	12	B	5	0	0		24
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2/9/2010	2	1	21	TABS	385	12	B	5	10	3		43
2/9/2010	2	1	21	SHANNON	385	12	B	5	10	3		32
2/9/2010	2	1	21	CHRISLY	385	12	B	5	0	0		15
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2/11/2010	2	3	1	CHRISLY	600	12	A	3	90	4		8
2/11/2010	2	3	6	TABS	827	12	B	5	30	4		33
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2/13/2010	2	5	11	TABS	489	12	A	0	100	4		36
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2/13/2010	2	5	11	SHANNON	489	12	A	0	100	4		35
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2/13/2010	2	5	12	CHRISLY	669	12	B	0	100	4		26
2/13/2010	2	5	12	SHANNON	669	12	B	0	100	4		23
2/15/2010	3	0	21	CHRISLY	134	12	A	4	0	0		33
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2/18/2010	3	3	15	TABS	533	12	A	7	90	4	59
2/18/2010	3	3	15	SHANNON	533	12	A	5	50	4	28
2/20/2010	3	5	6	TABS	775	12	A	0	100	4	52
2/20/2010	3	5	6	SHANNON	775	12	A	0	100	4	20
2/20/2010	3	5	16	TABS	17	12	B	0	100	4	51
2/20/2010	3	5	16	SHANNON	17	12	B	8	90	4	23
2/1/2010	1	0	25	CHRISLY	360	13	A	4	0	0	0
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2/1/2010	1	0	26	CHRISLY	854	13	B	4	0	0	0
2/1/2010	1	0	26	TABS	854	13	B	4	0	0	0
2/2/2010	1	1	3	SHANNON	165	13	A	5	10	3	2
2/2/2010	1	1	3	SARAH	165	13	A	5	0	0	.
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COOK DATA

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2/1/2010	1	1	1	3	B	199.5	160.8	9.9	642	73	653
2/1/2010	1	1	1	5	A	200.3	136.4	10.4	642	73	659
2/1/2010	1	1	1	5	B	199.9	157.6	10.1	642	73	657
2/1/2010	1	2	11	0	A	200.3	157.8	10.8	701	73	714
2/1/2010	1	2	11	0	B	199.9	162.3	10.8	701	73	714
2/1/2010	1	2	11	1	A	200.2	142.5	11.3	701	73	719
2/1/2010	1	2	11	1	B	200.5	127.5	11.7	701	73	719
2/1/2010	1	2	11	3	A	200.1	134.8	11.2	701	73	719
2/1/2010	1	2	11	3	B	199.9	136.4	11.4	701	73	718
2/1/2010	1	2	11	5	A	200.5	144	10.3	701	73	719
2/1/2010	1	2	11	5	B	200.5	136.8	11.2	701	73	720
2/1/2010	1	3	5	0	A	200.2	138.1	13.2	716	73	732
2/1/2010	1	3	5	0	B	200.4	136.7	13	716	73	729
2/1/2010	1	3	5	1	A	199.9	131.1	12	716	73	736
2/1/2010	1	3	5	1	B	199.6	144	10.6	716	73	729
2/1/2010	1	3	5	3	A	199.9	137.4	10.7	716	73	730
2/1/2010	1	3	5	3	B	200.4	130.6	10.1	716	74	732
2/1/2010	1	3	5	5	A	200.2	126.8	11.7	716	73	736
2/1/2010	1	3	5	5	B	200.4	145.5	11.6	716	73	730
2/1/2010	1	4	4	0	A	200.1	143	12.7	731	73	745
2/1/2010	1	4	4	0	B	199.7	127.1	12.4	731	73	749
2/1/2010	1	4	4	1	A	199.5	143.1	10.6	731	73	748
2/1/2010	1	4	4	1	B	199.8	139.7	9.2	731	73	748
2/1/2010	1	4	4	3	A	199.6	139.5	10.2	731	73	749
2/1/2010	1	4	4	3	B	200.3	139	9.5	731	73	748

2/1/2010	1	4	4	5	A	199.6	132	8.1	731	73	750
2/1/2010	1	4	4	5	B	200.4	127.8	11	731	73	750
2/1/2010	1	5	9	0	A	200.3	139.8	6.5	752	73	807
2/1/2010	1	5	9	0	B	200.2	155.1	11.1	752	73	805
2/1/2010	1	5	9	1	A	199.5	152.3	11.1	752	73	807
2/1/2010	1	5	9	1	B	199.7	147	10.7	752	73	810
2/1/2010	1	5	9	3	A	200.5	149.1	10.4	752	73	806
2/1/2010	1	5	9	3	B	200.2	152.4	11.3	752	73	805
2/1/2010	1	5	9	5	A	200.4	151.8	10.4	752	73	806
2/1/2010	1	5	9	5	B	200	155.9	10.1	752	73	810
2/1/2010	1	6	6	0	A	199.9	143.1	10.8	801	73	814
2/1/2010	1	6	6	0	B	199.7	122.8	9.6	801	73	818
2/1/2010	1	6	6	1	A	199.5	133.9	9.2	801	73	816
2/1/2010	1	6	6	1	B	199.8	124.8	7.7	801	73	818
2/1/2010	1	6	6	3	A	200.4	122	7.1	801	73	818
2/1/2010	1	6	6	3	B	200.1	135.3	7.7	801	73	819
2/1/2010	1	6	6	5	A	200.4	148.4	6.5	801	73	815
2/1/2010	1	6	6	5	B	200.4	134.6	7.8	801	73	816
2/1/2010	1	7	3	0	A	199.5	131.1	10	821	73	837
2/1/2010	1	7	3	0	B	199.5	136.7	11.4	821	73	837
2/1/2010	1	7	3	1	A	199.8	145.3	8.7	821	73	834
2/1/2010	1	7	3	1	B	199.9	142.9	7.9	821	73	836
2/1/2010	1	7	3	3	A	199.9	142.9	8.1	821	73	833
2/1/2010	1	7	3	3	B	200.4	144	8.3	821	73	833
2/1/2010	1	7	3	5	A	200.1	136.9	5.9	821	73	836
2/1/2010	1	7	3	5	B	200.2	134.2	6.5	821	73	840
2/1/2010	1	8	7	0	A	200.3	134.4	11.6	901	73	916
2/1/2010	1	8	7	0	B	200.5	147.5	12.7	901	73	914
2/1/2010	1	8	7	1	A	199.5	157.9	10.3	901	73	916
2/1/2010	1	8	7	1	B	199.6	142.5	10	901	73	919
2/1/2010	1	8	7	3	A	200.3	133.3	12.1	901	73	921
2/1/2010	1	8	7	3	B	199.8	163.5	9.5	901	73	915
2/1/2010	1	8	7	5	A	200.5	141.9	10.7	901	73	920

2/1/2010	1	8	7	5	B	200.2	148	15.1	901	73	917
2/1/2010	1	9	10	0	A	199.8	161.2	12.2	923	73	935
2/1/2010	1	9	10	0	B	199.9	167.2	12.4	923	73	933
2/1/2010	1	9	10	1	A	199.7	162.4	9.9	923	73	935
2/1/2010	1	9	10	1	B	200.2	135.3	8.8	923	73	941
2/1/2010	1	9	10	3	A	200.5	142.8	8.1	923	73	941
2/1/2010	1	9	10	3	B	200.1	145.9	8.4	923	73	940
2/1/2010	1	9	10	5	A	200.4	152.9	12.8	923	73	940
2/1/2010	1	9	10	5	B	200.4	169.1	7.6	923	73	933
2/1/2010	1	10	14	0	A	199.5	133.8	10.8	937	73	954
2/1/2010	1	10	14	0	B	200.3	145.3	8.7	937	73	951
2/1/2010	1	10	14	1	A	200	150.8	8.2	937	73	951
2/1/2010	1	10	14	1	B	199.8	142.4	7.5	937	73	951
2/1/2010	1	10	14	3	A	200.5	139.2	8.4	937	73	955
2/1/2010	1	10	14	3	B	200.5	135.3	6.4	937	73	955
2/1/2010	1	10	14	5	A	200	145.1	7	937	73	952
2/1/2010	1	10	14	5	B	200	142.3	6	937	73	955
2/1/2010	1	11	12	0	A	200	149.8	10.7	958	73	1012
2/1/2010	1	11	12	0	B	199.5	146.9	10.1	958	73	1011
2/1/2010	1	11	12	1	A	200.5	137	7.7	958	73	1018
2/1/2010	1	11	12	1	B	199.5	139.2	8.3	958	73	1014
2/1/2010	1	11	12	3	A	200	139	7.7	958	73	1015
2/1/2010	1	11	12	3	B	200.1	140.8	7.3	958	73	1015
2/1/2010	1	11	12	5	A	200.2	135.1	7.4	958	73	1017
2/1/2010	1	11	12	5	B	199.7	152	7.7	958	73	1014
2/1/2010	1	12	13	0	A	200.1	131.6	12	1020	73	1034
2/1/2010	1	12	13	0	B	199.6	129.9	13.5	1020	73	1037
2/1/2010	1	12	13	1	A	199.6	137.7	11	1020	73	1029
2/1/2010	1	12	13	1	B	199.9	136.1	10.3	1020	73	1034
2/1/2010	1	12	13	3	A	200.4	131.6	9.7	1020	73	1038
2/1/2010	1	12	13	3	B	199.5	154.4	10.2	1020	73	1034
2/1/2010	1	12	13	5	A	200.2	154.6	7.9	1020	73	1033
2/1/2010	1	12	13	5	B	199.9	128	9.2	1020	73	1039

2/1/2010	1	13	2	0	A	199.6	138.9	13.2	1047	73	1100
2/1/2010	1	13	2	0	B	199.7	151.4	13.3	1047	73	1059
2/1/2010	1	13	2	1	A	199.6	152.3	12.9	1047	73	1101
2/1/2010	1	13	2	1	B	199.9	145.4	13.2	1047	73	1100
2/1/2010	1	13	2	3	A	199.9	165.1	11	1047	73	1057
2/1/2010	1	13	2	3	B	200.5	136	12.4	1047	73	1105
2/1/2010	1	13	2	5	A	199.9	135.3	13.1	1047	73	1104
2/1/2010	1	13	2	5	B	200.1	138.8	12.8	1047	73	1100
2/1/2010	1	14	8	0	A	199.5	171.5	12	1107	73	1116
2/1/2010	1	14	8	0	B	199.5	129.6	13.3	1107	73	1125
2/1/2010	1	14	8	1	A	200.3	164.9	13.6	1107	73	1118
2/1/2010	1	14	8	1	B	199.8	134	12.5	1107	73	1125
2/1/2010	1	14	8	3	A	199.8	146.2	13.2	1107	73	1122
2/1/2010	1	14	8	3	B	199.5	151.8	12.7	1107	73	1125
2/1/2010	1	14	8	5	A	199.6	140.8	11.7	1107	73	1122
2/1/2010	1	14	8	5	B	200.1	152.6	12.8	1107	73	1121
2/8/2010	2	1	7	0	A	199.8	136.3	9.3	626	73	642
2/8/2010	2	1	7	0	B	199.7	129.7	3.2	626	73	641
2/8/2010	2	1	7	1	A	199.8	137	8	626	73	639
2/8/2010	2	1	7	1	B	200	134	9.5	626	73	641
2/8/2010	2	1	7	3	A	206.5	144	10.2	626	73	642
2/8/2010	2	1	7	3	B	206.4	134	8.3	626	73	644
2/8/2010	2	1	7	5	A	200.5	144.7	9.9	626	73	640
2/8/2010	2	1	7	5	B	199.8	137.8	9.4	626	73	643
2/8/2010	2	2	4	0	A	200.5	137	8.5	636	73	655
2/8/2010	2	2	4	0	B	199.9	139.8	10.5	636	73	651
2/8/2010	2	2	4	1	A	199.8	133.7	8	636	73	655
2/8/2010	2	2	4	1	B	199.6	141.5	9.5	636	73	655
2/8/2010	2	2	4	3	A	200.1	137.9	7.1	636	73	652
2/8/2010	2	2	4	3	B	199.9	137.4	7.8	636	73	652
2/8/2010	2	2	4	5	A	199.7	139.7	8.4	636	73	651
2/8/2010	2	2	4	5	B	200.4	151.7	7.6	636	73	650
2/8/2010	2	3	10	0	A	200	132.5	11.9	658	73	716

2/8/2010	2	3	10	0	B	200.4	140.8	9.7	658	73	713
2/8/2010	2	3	10	1	A	199.9	124.4	10.1	658	73	717
2/8/2010	2	3	10	1	B	199.9	142.7	8.5	658	73	711
2/8/2010	2	3	10	3	A	200	129.4	6.9	658	73	716
2/8/2010	2	3	10	3	B	200	137.2	7.3	658	73	716
2/8/2010	2	3	10	5	A	200.5	144.6	7.9	658	73	713
2/8/2010	2	3	10	5	B	200.2	148.6	7.5	658	73	712
2/8/2010	2	4	6	0	A	200.2	132.9	12	708	73	721
2/8/2010	2	4	6	0	B	199	138.4	10.2	708	73	721
2/8/2010	2	4	6	1	A	199.6	151.4	13.2	708	73	719
2/8/2010	2	4	6	1	B	199.2	139.7	9	708	73	724
2/8/2010	2	4	6	3	A	199.9	138.2	9.5	708	73	722
2/8/2010	2	4	6	3	B	200.4	157.2	10.2	708	73	719
2/8/2010	2	4	6	5	A	199.8	141.3	11.9	708	73	723
2/8/2010	2	4	6	5	B	199.9	147.1	8.8	708	73	721
2/8/2010	2	5	1	0	A	199.9	146.7	9.1	728	73	738
2/8/2010	2	5	1	0	B	199.5	128.8	7.1	728	73	748
2/8/2010	2	5	1	1	A	200.4	149.5	8	728	73	740
2/8/2010	2	5	1	1	B	200	127.4	9	728	73	748
2/8/2010	2	5	1	3	A	199.9	151.1	8.1	728	73	740
2/8/2010	2	5	1	3	B	199.6	133	10	728	73	748
2/8/2010	2	5	1	5	A	199.7	125.8	7.4	728	73	747
2/8/2010	2	5	1	5	B	200	135.5	6.2	728	73	743
2/8/2010	2	6	5	0	A	200.1	143.6	8	739	73	750
2/8/2010	2	6	5	0	B	200.5	131.8	8.8	739	73	756
2/8/2010	2	6	5	1	A	199.8	146.2	10.1	739	73	751
2/8/2010	2	6	5	1	B	199.5	128.4	9.6	739	73	757
2/8/2010	2	6	5	3	A	199.6	136.7	6.3	739	73	755
2/8/2010	2	6	5	3	B	199.6	147.9	6.3	739	73	751
2/8/2010	2	6	5	5	A	200	134.2	7.4	739	73	754
2/8/2010	2	6	5	5	B	200.4	134.8	3.3	739	73	757
2/8/2010	2	7	8	0	A	200.4	129.4	12.1	.	73	817
2/8/2010	2	7	8	0	B	199.9	133.1	6	.	73	818

2/8/2010	2	7	8	1	A	200.5	140.5	7	.		73	817
2/8/2010	2	7	8	1	B	199.8	145	9.3	.		73	819
2/8/2010	2	7	8	3	A	200.3	169.7	9.47	.		73	811
2/8/2010	2	7	8	3	B	199.6	134.8	7.5	.		73	819
2/8/2010	2	7	8	5	A	199.9	157.3	11	.		73	813
2/8/2010	2	7	8	5	B	200.4	138.7	9.2	.		73	820
2/8/2010	2	8	13	0	A	199.5	143.5	11.6		815	73	828
2/8/2010	2	8	13	0	B	200.3	137.4	7.8		815	73	830
2/8/2010	2	8	13	1	A	200.5	141.9	10.9		815	73	830
2/8/2010	2	8	13	1	B	200	153	7.2		815	73	828
2/8/2010	2	8	13	3	A	200.1	137.5	6.6		815	73	832
2/8/2010	2	8	13	3	B	199.7	165.1	8.9		815	73	826
2/8/2010	2	8	13	5	A	200.1	161.8	5.6		815	73	826
2/8/2010	2	8	13	5	B	199.7	138	4.7		815	73	833
2/8/2010	2	9	12	0	A	200.4	140.4	6.9		831	73	848
2/8/2010	2	9	12	0	B	199.9	147.5	4.5		831	73	845
2/8/2010	2	9	12	1	A	200.5	163.4	6.1		831	73	842
2/8/2010	2	9	12	1	B	200.3	148.7	8.7		831	73	845
2/8/2010	2	9	12	3	A	199.9	155.2	6.5		831	73	842
2/8/2010	2	9	12	3	B	200.5	151.5	5.2		831	73	846
2/8/2010	2	9	12	5	A	200.5	137.5	4.5		831	73	848
2/8/2010	2	9	12	5	B	200.3	144.1	4.1		831	73	846
2/8/2010	2	10	3	0	A	199.6	139.1	7.9		849	73	904
2/8/2010	2	10	3	0	B	200.2	139.8	7.5		849	73	904
2/8/2010	2	10	3	1	A	199.6	131.5	9.3		849	73	903
2/8/2010	2	10	3	1	B	199.9	136.1	7.8		849	73	908
2/8/2010	2	10	3	3	A	200.1	133.4	6.5		849	73	905
2/8/2010	2	10	3	3	B	199.5	141.6	7		849	73	903
2/8/2010	2	10	3	5	A	199.9	135.1	6.8		849	73	904
2/8/2010	2	10	3	5	B	199.5	121	9.3		849	73	904
2/8/2010	2	11	14	0	A	200	139.2	8.3		900	73	916
2/8/2010	2	11	14	0	B	199.9	139.5	7.8		900	73	916
2/8/2010	2	11	14	1	A	199.9	145.8	8.4		900	73	916

2/8/2010	2	11	14	1	B	200.4	139.1	8.4	900	73	916
2/8/2010	2	11	14	3	A	200.2	141.4	7.4	900	73	917
2/8/2010	2	11	14	3	B	200	144.4	7.3	900	73	915
2/8/2010	2	11	14	5	A	200.2	161.7	6	900	73	912
2/8/2010	2	11	14	5	B	199.9	160	11	900	73	912
2/8/2010	2	12	9	0	A	200	136.1	11	918	73	933
2/8/2010	2	12	9	0	B	199.8	134.9	4.6	918	73	930
2/8/2010	2	12	9	1	A	200.3	140.2	9.3	918	73	931
2/8/2010	2	12	9	1	B	200.4	138.5	9	918	73	933
2/8/2010	2	12	9	3	A	199.7	147.8	7.7	918	73	931
2/8/2010	2	12	9	3	B	200	139.9	10.5	918	73	933
2/8/2010	2	12	9	5	A	199.8	146.1	6.9	918	73	932
2/8/2010	2	12	9	5	B	200.3	141	8	918	73	930
2/8/2010	2	13	11	0	A	200.3	158.3	13.4	941	73	951
2/8/2010	2	13	11	0	B	199.8	137	12	941	73	957
2/8/2010	2	13	11	1	A	200.2	142.2	11.7	941	73	957
2/8/2010	2	13	11	1	B	200.4	146.9	10.7	941	73	955
2/8/2010	2	13	11	3	A	200	150.4	11.2	941	73	951
2/8/2010	2	13	11	3	B	199.7	134.8	11.1	941	73	956
2/8/2010	2	13	11	5	A	200	142.8	7.9	941	73	955
2/8/2010	2	13	11	5	B	200.1	151.4	8.3	941	73	956
2/8/2010	2	14	2	0	A	199.8	137.7	12.9	950	73	1006
2/8/2010	2	14	2	0	B	200.1	131.8	9.1	950	73	1005
2/8/2010	2	14	2	1	A	200.1	145.1	10.6	950	73	1003
2/8/2010	2	14	2	1	B	200	132.6	9.6	950	73	1005
2/8/2010	2	14	2	3	A	200	140.1	8.9	950	73	1006
2/8/2010	2	14	2	3	B	200	136.5	8.2	950	73	1005
2/8/2010	2	14	2	5	A	199.9	136.7	8.7	950	73	1003
2/8/2010	2	14	2	5	B	200.2	138	9.5	950	73	1004
2/15/2010	3	1	11	0	A	200.1	139.8	8.2	629	73	644
2/15/2010	3	1	11	0	B	200.1	141.7	7.7	629	73	643
2/15/2010	3	1	11	1	A	199.7	146.2	10.1	629	73	642
2/15/2010	3	1	11	1	B	200	141.9	7.3	629	73	644

2/15/2010	3	1	11	3	A	200	144.8	7.8	629	73	643
2/15/2010	3	1	11	3	B	199.5		7	629	73	145.7
2/15/2010	3	1	11	5	A	200	143.6	7.9	629	73	642
2/15/2010	3	1	11	5	B	200	152.9	7.8	629	73	643
2/15/2010	3	2	5	0	A	199.8	138.3	6.9	645	73	700
2/15/2010	3	2	5	0	B	199.7	134.2	8.6	645	73	701
2/15/2010	3	2	5	1	A	200.4	136.2	7.2	645	73	659
2/15/2010	3	2	5	1	B	200	137.2	7.6	645	73	700
2/15/2010	3	2	5	3	A	200.3	140.5	7.7	645	73	701
2/15/2010	3	2	5	3	B	199.9	138.3	9	645	73	701
2/15/2010	3	2	5	5	A	199.5	125	6.8	645	73	702
2/15/2010	3	2	5	5	B	200.3	131.4	5	645	73	702
2/15/2010	3	3	13	0	A	199.9	134.5	8.5	656	73	712
2/15/2010	3	3	13	0	B	200	130.7	11.2	656	73	711
2/15/2010	3	3	13	1	A	199.9	131.8	6.5	656	73	712
2/15/2010	3	3	13	1	B	200.1	132.6	7.4	656	73	711
2/15/2010	3	3	13	3	A	200.5	132.4	8.2	656	73	712
2/15/2010	3	3	13	3	B	199.8	140	7.2	656	73	713
2/15/2010	3	3	13	5	A	199.9	134.8	7.4	656	73	712
2/15/2010	3	3	13	5	B	199.6	136.4	6.8	656	73	711
2/15/2010	3	4	2	0	A	200	138.6	9.4	714	73	728
2/15/2010	3	4	2	0	B	200.2	142	7.4	714	73	728
2/15/2010	3	4	2	1	A	200.4	146.1	9.4	714	73	729
2/15/2010	3	4	2	1	B	200.2	137.7	8.2	714	73	729
2/15/2010	3	4	2	3	A	199.5	151	8.3	714	73	728
2/15/2010	3	4	2	3	B	199.8	128.9	8.2	714	73	732
2/15/2010	3	4	2	5	A	200	154.2	9.1	714	73	728
2/15/2010	3	4	2	5	B	199.9	162.4	8.4	714	73	727
2/15/2010	3	5	9	0	A	200.1	140.4	10.5	730	73	745
2/15/2010	3	5	9	0	B	200.1	138	9.5	730	73	744
2/15/2010	3	5	9	1	A	200.5	137.8	8.2	730	73	744
2/15/2010	3	5	9	1	B	199.5	147.7	7.7	730	73	742
2/15/2010	3	5	9	3	A	200.1	159.1	6.4	730	73	740

2/15/2010	3	5	9	3	B	200.5	147.8	7.6		730	73	742
2/15/2010	3	5	9	5	A	200.3	145.7	6.1		730	73	745
2/15/2010	3	5	9	5	B	199.6	155.4	6.7		730	73	740
2/15/2010	3	6	7	0	A	200.1	137.8	9.6		743	73	800
2/15/2010	3	6	7	0	B	200.5	147.4	9.8		743	73	756
2/15/2010	3	6	7	1	A	200.1	138.2	8		743	73	800
2/15/2010	3	6	7	1	B	200.2	139.6	8.2		743	73	759
2/15/2010	3	6	7	3	A	199.9	133.6	7.5		743	73	759
2/15/2010	3	6	7	3	B	200.1	133	7.1		743	73	759
2/15/2010	3	6	7	5	A	199.6	140.6	6.7		743	73	759
2/15/2010	3	6	7	5	B	199.7	140	5.4		743	73	756
2/15/2010	3	7	4	0	A	200	138.7	11.8	.		73	811
2/15/2010	3	7	4	0	B	199.5	139.1	9.9	.		73	810
2/15/2010	3	7	4	1	A	200.2	130.2	9.9	.		73	814
2/15/2010	3	7	4	1	B	200.3	151.3	8.2	.		73	808
2/15/2010	3	7	4	3	A	200.1	140.7	8.3	.		73	808
2/15/2010	3	7	4	3	B	199.7	139	7.9	.		73	810
2/15/2010	3	7	4	5	A	200	132.7	7.9	.		73	814
2/15/2010	3	7	4	5	B	199.9	133.3	12.1	.		73	811
2/15/2010	3	8	8	0	A	199.6	147.9	10.5		813	73	824
2/15/2010	3	8	8	0	B	199.8	130.2	5.9		813	73	829
2/15/2010	3	8	8	1	A	200.5	128.6	8.4		813	73	829
2/15/2010	3	8	8	1	B	200	127.3	6.6		813	73	829
2/15/2010	3	8	8	3	A	200	134	8.8		813	73	830
2/15/2010	3	8	8	3	B	200.3	152.1	8		813	73	824
2/15/2010	3	8	8	5	A	200.3	135.4	9.2		813	73	830
2/15/2010	3	8	8	5	B	199.6	135.2	8.2		813	73	830
2/15/2010	3	9	1	0	A	200.3	136.5	10		825	73	840
2/15/2010	3	9	1	0	B	200.1	128.2	11.7		825	73	840
2/15/2010	3	9	1	1	A	200.4	139.7	5.9		825	73	838
2/15/2010	3	9	1	1	B	199.6	135.7	10.1		825	73	837
2/15/2010	3	9	1	3	A	200	134.1	10.9		825	73	840
2/15/2010	3	9	1	3	B	200	130.3	8.6		825	73	840

2/15/2010	3	9	1	5	A	200.1	135.8	8.6	825	73	837
2/15/2010	3	9	1	5	B	199.8	138.4	7.3	825	73	836
2/15/2010	3	10	3	0	A	199.7	151.5	10	838	73	850
2/15/2010	3	10	3	0	B	200.2	130.1	9.7	838	73	854
2/15/2010	3	10	3	1	A	199.7	129.2	9.3	838	73	853
2/15/2010	3	10	3	1	B	199.8	141.5	10.4	838	73	851
2/15/2010	3	10	3	3	A	200.2	155.2	12.3	838	73	850
2/15/2010	3	10	3	3	B	199.5	147.5	11.3	838	73	851
2/15/2010	3	10	3	5	A	199.5	134.6	6.9	838	73	854
2/15/2010	3	10	3	5	B	199.6	133.6	9.5	838	73	854
2/15/2010	3	11	12	0	A	200.3	140.4	9.4	851	73	905
2/15/2010	3	11	12	0	B	199.7	122.1	9	851	73	905
2/15/2010	3	11	12	1	A	199.7	129.8	11	851	73	908
2/15/2010	3	11	12	1	B	199.9	134.9	9.5	851	73	907
2/15/2010	3	11	12	3	A	199.6	139.8	9	851	73	906
2/15/2010	3	11	12	3	B	200.7	138.5	13.3	851	73	908
2/15/2010	3	11	12	5	A	200.4	134.5	13.6	851	73	907
2/15/2010	3	11	12	5	B	200.2	131.8	9	851	73	906
2/15/2010	3	12	10	0	A	200.3	128.4	11.1	904	73	922
2/15/2010	3	12	10	0	B	200.3	120.9	6.3	904	73	922
2/15/2010	3	12	10	1	A	200.2	140.7	10	904	73	919
2/15/2010	3	12	10	1	B	200.1	146.2	9.8	904	73	918
2/15/2010	3	12	10	3	A	199.6	123.5	7.6	904	73	925
2/15/2010	3	12	10	3	B	200.1	116.2	7.5	904	73	925
2/15/2010	3	12	10	5	A	200.3	143.4	8.9	904	73	918
2/15/2010	3	12	10	5	B	200.5	147.1	9.8	904	73	918
2/15/2010	3	13	6	0	A	199.8	135.2	9.6	921	73	934
2/15/2010	3	13	6	0	B	199.8	138.5	8.9	921	73	934
2/15/2010	3	13	6	1	A	199.7	136.8	9	921	73	933
2/15/2010	3	13	6	1	B	200.3	152.9	9.2	921	73	933
2/15/2010	3	13	6	3	A	200.3	134.1	8.9	921	73	935
2/15/2010	3	13	6	3	B	200.1	145.7	8.1	921	73	935
2/15/2010	3	13	6	5	A	199.7	154.5	7.9	921	73	930

2/15/2010	3	13	6	5	B	199.5	158.4	9.2	921	73	930
2/15/2010	3	14	14	0	A	200	148.3	10.2	939	73	951
2/15/2010	3	14	14	0	B	200.4	123.7	5.6	939	73	957
2/15/2010	3	14	14	1	A	200.5	139.3	10.5	939	73	955
2/15/2010	3	14	14	1	B	199.5	138.6	11.1	939	73	951
2/15/2010	3	14	14	3	A	200	144.4	10.5	939	73	951
2/15/2010	3	14	14	3	B	200.5	126.4	13.8	939	73	958
2/15/2010	3	14	14	5	A	199.6	142.8	10.7	939	73	951
2/15/2010	3	14	14	5	B	200.5	136.6	9.2	939	73	955

APPENDIX D

RAW DATA

STUDY 2. CONSUMER SENSORY STUDY

TREATMENT CODES

Code	Amount	Abbreviation	Name
1		C	Control
2	0.02%	BB	BHA/BHT
3	0.20%	RM	Rosemarry
4	0.50%	CG	Chardonnay Grapeseed
5	0.10%	Ch	Chestnut
6	0.50%	BTS	Black Tannin Sorghum

TBARS

Date	Batch	Day	Order	Trt	Patty	SampleA	SlurryA	SampleB	SlurryB	AbsA1	AbsA2	AbsB1	AbsB2
2/1/2010	1	0	1	1	A	30.02	30.01	30.03	30	0.111	0.12	0.1	0.1
2/1/2010	1	0	2	1	B	29.99	30.01	29.98	30	0.135	0.122	0.14	0.12
2/1/2010	1	0	27	2	A	30	29.99	30.03	30	0.048	0.046	0.05	0.05
2/1/2010	1	0	28	2	B	30.03	30.03	30.01	30.02	0.045	0.043	0.05	0.04
2/1/2010	1	0	13	3	A	30.02	30.03	30.02	30.03	0.055	0.054	0.06	0.06
2/1/2010	1	0	14	3	B	30.02	30.01	30	30.01	0.067	0.054	0.06	0.06
2/1/2010	1	0	7	4	A	30	30	30.01	30	0.046	0.046	0.05	0.04
2/1/2010	1	0	8	4	B	30.03	30	30	30.01	0.045	0.047	0.05	0.04
2/1/2010	1	0	5	5	A	29.99	30	30.03	30.03	0.03	0.038	0.04	0.03
2/1/2010	1	0	6	5	B	30	30.01	30	30.02	0.04	0.038	0.04	0.03
2/1/2010	1	0	11	6	A	30.03	30.03	30.03	30.03	0.038	0.045	0.04	0.03
2/1/2010	1	0	12	6	B	30.02	30.02	30.02	30	0.036	0.034	0.03	0.04
2/1/2010	1	0	17	7	A	30.01	29.98	29.98	29.98	0.047	0.048	0.04	0.04
2/1/2010	1	0	18	7	B	30.02	30.02	29.98	29.97	0.043	0.042	0.04	0.04
2/1/2010	1	0	15	8	A	30.03	30	30.01	29.99	0.041	0.034	0.04	0.04
2/1/2010	1	0	16	8	B	29.98	30	29.99	29.97	0.039	0.038	0.04	0.04
2/1/2010	1	0	9	9	A	30	30	30.01	30.02	0.046	0.055	0.04	0.05
2/1/2010	1	0	10	9	B	30.01	30.01	30.02	30.03	0.048	0.043	0.05	0.05
2/1/2010	1	0	19	#	A	29.98	30	30	30.02	0.036	0.032	0.04	0.03
2/1/2010	1	0	20	#	B	30.01	29.97	30	29.99	0.031	0.044	0.03	0.03
2/1/2010	1	0	3	#	A	30.01	30.02	30	30.02	0.05	0.048	0.05	0.05
2/1/2010	1	0	4	#	B	30.03	30.03	30.01	30	0.051	0.06	0.05	0.05
2/1/2010	1	0	23	#	A	29.98	29.99	29.98	30.01	0.06	0.056	0.04	0.05
2/1/2010	1	0	24	#	B	30.01	30	30	30.02	0.059	0.065	0.05	0.05
2/1/2010	1	0	25	#	A	30.02	30.01	30	30.03	0.07	0.074	0.09	0.08
2/1/2010	1	0	26	#	B	30	29.99	30	30.03	0.074	0.071	0.07	0.07
2/1/2010	1	0	21	#	A	29.97	30.03	30	29.99	0.049	0.052	0.05	0.05
2/1/2010	1	0	22	#	B	30	30.01	30.03	30	0.049	0.049	0.07	0.06
2/2/2010	1	1	4	1	B	30.01	30	29.99	30.01	0.177	0.188	0.18	0.18
2/2/2010	1	1	17	1	A	29.99	30.02	30.02	30	0.322	0.32	0.34	0.34

2/2/2010	1	1	1	2	A	30.02	29.98	30	29.99	0.096	0.108	0.1	0.1
2/2/2010	1	1	25	2	B	30	29.98	30.03	29.99	0.106	0.103	0.11	0.12
2/2/2010	1	1	2	3	B	30.01	30.02	30	29.98	0.136	0.15	0.14	0.15
2/2/2010	1	1	12	3	A	30	29.99	29.99	30	0.142	0.146	0.14	0.15
2/2/2010	1	1	15	4	A	30.03	30.01	30.03	29.98	0.043	0.042	0.05	0.04
2/2/2010	1	1	27	4	B	30.01	29.98	29.99	30.02	0.041	0.045	0.04	0.04
2/2/2010	1	1	21	5	B	29.99	30.02	30	30	0.024	0.042	0.04	0.04
2/2/2010	1	1	24	5	A	29.99	30	30.02	29.99	0.028	0.028	0.03	0.02
2/2/2010	1	1	6	6	A	29.99	30.02	30	30.02	0.031	0.033	0.03	0.03
2/2/2010	1	1	14	6	B	30	30.02	29.99	30	0.047	0.035	0.04	0.05
2/2/2010	1	1	5	7	B	30.01	30	30.02	29.99	0.105	0.12	0.11	0.13
2/2/2010	1	1	23	7	A	30.03	30.01	30	29.99	0.087	0.107	0.09	0.1
2/2/2010	1	1	8	8	B	30	29.98	30.02	29.98	0.072	0.061	0.04	0.06
2/2/2010	1	1	13	8	A	29.99	30.02	30.03	30	0.047	0.047	0.05	0.04
2/2/2010	1	1	26	8	A	30.03	30	30.03	30.02	0.042	0.042	0.05	0.04
2/2/2010	1	1	11	9	A	29.99	29.99	29.98	30.01	0.11	0.112	0.12	0.11
2/2/2010	1	1	22	9	B	30.01	30.01	29.99	29.98	0.128	0.133	0.13	0.14
2/2/2010	1	1	18	#	B	29.99	30.02	30.02	30	0.05	0.066	0.05	0.05
2/2/2010	1	1	10	#	B	30.01	29.99	30	29.98	0.131	0.123	0.14	0.13
2/2/2010	1	1	20	#	A	30	30.02	29.98	30	0.141	0.15	0.14	0.14
2/2/2010	1	1	7	#	A	30	30.02	30	30.02	0.066	0.059	0.07	0.06
2/2/2010	1	1	19	#	B	30	29.99	30.01	29.98	0.058	0.066	0.06	0.06
2/2/2010	1	1	3	#	A	30.01	30.01	30.01	30.02	0.255	0.244	0.23	0.24
2/2/2010	1	1	9	#	B	30.01	29.99	29.98	29.98	0.242	0.244	0.23	0.23
2/2/2010	1	1	16	#	A	29.99	30	30	30.02	0.154	0.149	0.16	0.16
2/2/2010	1	1	28	#	B	30	30	30.01	29.98	0.188	0.16	0.19	0.17
2/4/2010	1	3	10	1	A	30.02	30.03	30.03	30.01	0.386	0.391	0.44	0.45
2/4/2010	1	3	15	1	B	30.01	29.99	30	30	0.379	0.378	0.41	0.41
2/4/2010	1	3	1	2	A	29.98	29.97	30.01	30.03	0.131	0.132	0.14	0.14
2/4/2010	1	3	17	2	B	30.02	29.98	29.99	29.99	0.174	0.163	0.17	0.17
2/4/2010	1	3	13	3	A	30.01	29.98	30.01	30.01	0.287	0.277	0.09	0.35
2/4/2010	1	3	24	3	B	29.99	30	29.99	30.01	0.332	0.324	0.33	0.32
2/4/2010	1	3	18	4	B	30.02	29.98	29.98	30	0.045	0.04	0.04	0.04

2/4/2010	1	3	28	4	A	30.03	30	30.01	29.98	0.049	0.054	0.05	0.05
2/4/2010	1	3	8	5	B	29.98	30	30.02	30.01	0.035	0.032	0.04	0.03
2/4/2010	1	3	11	5	A	30	29.98	30.02	30	0.036	0.029	0.03	0.03
2/4/2010	1	3	20	6	B	29.98	30	29.98	30	0.032	0.023	0.03	0.03
2/4/2010	1	3	21	6	A	30	30.01	29.98	29.98	0.015	0.023	0.02	0.02
2/4/2010	1	3	12	7	B	30.03	30.01	29.98	30.02	0.02	0.21	0.19	0.2
2/4/2010	1	3	23	7	A	30.02	29.99	30.01	30.01	0.276	0.288	0.3	0.3
2/4/2010	1	3	7	8	B	30	29.99	29.98	30.01	0.082	0.079	0.08	0.08
2/4/2010	1	3	9	8	A	30.03	30.03	29.99	30.03	0.082	0.081	0.09	0.09
2/4/2010	1	3	16	9	B	30.02	30.01	30	30	0.247	0.218	0.24	0.23
2/4/2010	1	3	25	9	A	30.01	30.01	30	30.01	0.255	0.252	0.25	0.24
2/4/2010	1	3	3	#	A	29.98	30.03	30	30.03	0.078	0.081	0.08	0.08
2/4/2010	1	3	4	#	B	29.98	30.03	30	30.03	0.08	0.082	0.08	0.08
2/4/2010	1	3	19	#	B	29.99	29.98	29.98	30	0.241	0.236	0.27	0.27
2/4/2010	1	3	26	#	A	30.02	30.02	30.01	29.98	0.285	0.284	0.28	0.28
2/4/2010	1	3	6	#	B	30	30	29.99	30.01	0.129	0.111	0.11	0.11
2/4/2010	1	3	14	#	A	30	30.02	29.98	30	0.02	0.098	0.1	0.1
2/4/2010	1	3	2	#	A	29.98	29.99	29.97	30	0.54	0.545	0.57	0.58
2/4/2010	1	3	22	#	B	30	30.01	29.99	29.98	0.404	0.389	0.34	0.32
2/4/2010	1	3	5	#	A	30.01	30.01	29.97	29.99	0.325	0.314	0.36	0.36
2/4/2010	1	3	27	#	B	30.01	29.99	30	29.98	0.428	0.427	0.42	0.46
2/6/2010	1	5	10	1	A	30.02	30.01	29.99	29.99	0.875	0.994	1.07	1.06
2/6/2010	1	5	22	1	B	30.01	30	29.98	30.03	0.714	0.732	0.77	0.79
2/6/2010	1	5	17	2	A	29.99	30.01	29.99	30	0.192	0.206	0.2	0.2
2/6/2010	1	5	20	2	A	29.98	30	30	29.99	0.223	0.225	0.27	0.3
2/6/2010	1	5	7	3	B	30	30.02	30.03	30	0.57	0.546	0.61	0.6
2/6/2010	1	5	18	3	A	30	30.02	29.99	29.99	0.526	0.514	0.44	0.43
2/6/2010	1	5	1	4	A	29.99	29.99	30	30.01	0.056	0.049	0.05	0.05
2/6/2010	1	5	23	4	B	29.97	29.99	29.99	30.02	0.05	0.043	0.05	0.06
2/6/2010	1	5	3	5	B	29.99	30.02	30.02	30.02	0.041	0.041	0.04	0.04
2/6/2010	1	5	16	5	A	30.02	29.99	30.01	30	0.038	0.036	0.04	0.04
2/6/2010	1	5	2	6	B	29.99	30	29.99	29.99	0.037	0.034	0.04	0.04
2/6/2010	1	5	24	6	A	29.98	30	29.98	29.98	0.031	0.035	0.03	0.03

2/6/2010	1	5	12	7	B	30.02	30.01	30	30	0.25	0.25	0.27	0.29
2/6/2010	1	5	25	7	A	30.02	30	29.97	29.98	0.26	0.271	0.35	0.34
2/6/2010	1	5	6	8	B	30.02	30	29.98	30.02	0.111	0.114	0.11	0.12
2/6/2010	1	5	9	8	A	30.01	30.01	29.99	30	0.113	0.122	0.11	0.11
2/6/2010	1	5	11	9	B	30.02	30.02	30.01	30.02	0.226	0.219	0.24	0.24
2/6/2010	1	5	28	9	A	30.02	30.01	30.01	29.99	0.275	0.264	0.29	0.3
2/6/2010	1	5	13	#	A	30.03	29.98	29.99	30.02	0.096	0.11	0.1	0.11
2/6/2010	1	5	19	#	B	29.98	30.02	30.02	29.98	0.059	0.063	0.06	0.08
2/6/2010	1	5	15	#	A	29.99	29.99	30.02	30.02	0.353	0.349	0.36	0.38
2/6/2010	1	5	26	#	B	29.98	30.01	29.98	30.01	0.42	0.403	0.39	0.37
2/6/2010	1	5	5	#	B	30	30	30.02	30.02	0.106	0.107	0.11	0.1
2/6/2010	1	5	14	#	A	30.01	29.98	30	30.02	0.13	0.141	0.15	0.15
2/6/2010	1	5	4	#	B	30.01	30.02	30.02	30	0.796	0.715	0.89	0.72
2/6/2010	1	5	8	#	A	29.99	30.03	30.02	29.99	0.591	0.595	0.58	0.59
2/6/2010	1	5	21	#	A	30.02	30.02	29.99	30	0.481	0.478	0.44	0.46
2/6/2010	1	5	27	#	B	30	30	30.01	29.99	0.5	0.521	0.48	0.46
2/8/2010	2	0	3	1	B	29.99	30	29.99	30.02	0.129	0.122	0.13	0.13
2/8/2010	2	0	8	1	A	29.98	30.01	29.99	30	0.152	0.158	0.16	0.16
2/8/2010	2	0	18	2	A	29.97	30.01	30.03	29.99	0.098	0.107	0.11	0.1
2/8/2010	2	0	27	2	B	29.97	30	29.99	30.03	0.111	0.108	0.11	0.11
2/8/2010	2	0	6	3	B	30.03	30.02	30.03	30.01	0.102	0.102	0.1	0.1
2/8/2010	2	0	12	3	A	29.99	29.99	30.03	30.01	0.105	0.105	0.11	0.11
2/8/2010	2	0	1	4	B	29.97	30.03	29.99	29.98	0.092	0.094	0.1	0.09
2/8/2010	2	0	7	4	A	30.01	30	30.01	30.03	0.09	0.09	0.09	0.09
2/8/2010	2	0	9	5	A	29.99	29.98	30.01	30	0.089	0.087	0.09	0.09
2/8/2010	2	0	19	5	A	30.01	29.98	29.97	29.99	0.089	0.088	0.09	0.11
2/8/2010	2	0	5	6	A	29.98	30.02	29.99	30.01	0.09	0.099	0.09	0.09
2/8/2010	2	0	11	6	B	30	30.02	30	29.99	0.084	0.086	0.1	0.1
2/8/2010	2	0	23	7	A	30.02	30.01	29.98	29.99	0.134	0.139	0.13	0.12
2/8/2010	2	0	25	7	B	30.01	30	30.01	30.01	0.103	0.113	0.12	0.12
2/8/2010	2	0	15	8	B	30	30.02	29.98	29.98	0.085	0.082	0.09	0.09
2/8/2010	2	0	17	8	B	30.02	30.01	30	30	0.097	0.107	0.09	0.09
2/8/2010	2	0	10	9	B	30.02	30.02	30	30.02	0.098	0.101	0.1	0.08

2/8/2010	2	0	26	9	A	30.03	30	30.03	29.99	0.126	0.112	0.12	0.11
2/8/2010	2	0	16	#	A	29.99	29.99	30.03	30.01	0.092	0.09	0.08	0.09
2/8/2010	2	0	24	#	B	30.03	29.97	30.01	29.98	0.094	0.116	0.1	0.11
2/8/2010	2	0	14	#	B	29.98	29.98	30.01	30.01	0.098	0.107	0.1	0.11
2/8/2010	2	0	20	#	A	30	30.02	29.98	29.97	0.109	0.104	0.11	0.12
2/8/2010	2	0	21	#	A	29.97	29.99	29.99	29.98	0.082	0.078	0.08	0.1
2/8/2010	2	0	22	#	B	30.02	30	30	30.01	0.086	0.065	0.1	0.09
2/8/2010	2	0	4	#	A	30.01	30.02	30.01	29.99	0.107	0.101	0.11	0.1
2/8/2010	2	0	28	#	B	30	30.01	30.01	29.97	0.141	0.149	0.14	0.13
2/8/2010	2	0	2	#	B	30.03	30	30.01	30	0.106	0.092	0.09	0.1
2/8/2010	2	0	13	#	A	29.99	30.03	30	29.99	0.1	0.102	0.1	0.1
2/9/2010	2	1	5	1	A	29.99	30.02	30.01	30	0.186	0.196	0.3	0.22
2/9/2010	2	1	14	1	B	30	30	30	30.01	0.161	0.169	0.15	0.14
2/9/2010	2	1	24	2	A	29.99	29.99	29.99	29.99	0.178	0.181	0.13	0.12
2/9/2010	2	1	27	2	B	29.99	30.01	30	30.01	0.072	0.129	0.08	0.08
2/9/2010	2	1	18	3	B	30.01	30.02	29.98	30.02	0.155	0.161	0.17	0.17
2/9/2010	2	1	26	3	A	29.99	29.99	30	29.98	0.153	0.162	0.15	0.15
2/9/2010	2	1	1	4	A	30.02	30.01	30.02	29.99	0.103	0.109	0.11	0.11
2/9/2010	2	1	20	4	B	30	29.99	29.99	29.99	0.059	0.067	0.08	0.08
2/9/2010	2	1	13	5	B	30	29.99	30.01	30	0.132	0.139	0.16	0.15
2/9/2010	2	1	21	5	A	30	30.01	30.01	30.02	0.147	0.147	0.14	0.13
2/9/2010	2	1	6	6	B	30	29.99	29.99	30.01	0.09	0.094	0.15	0.12
2/9/2010	2	1	22	6	A	29.99	29.98	30.02	29.98	0.133	0.127	0.11	0.14
2/9/2010	2	1	2	7	A	29.99	30	30.02	29.99	0.101	0.096	0.11	0.12
2/9/2010	2	1	15	7	B	30.01	30.01	30.02	30	0.084	0.086	0.07	0.07
2/9/2010	2	1	12	8	B	30.02	30.01	30.01	29.98	0.155	0.143	0.15	0.15
2/9/2010	2	1	28	8	A	30.02	30	30.02	29.98	0.343	0.35	0.48	0.48
2/9/2010	2	1	7	9	A	30.02	30	30.02	29.99	0.095	0.096	0.13	0.1
2/9/2010	2	1	25	9	B	30.02	29.98	30.01	29.98	0.098	0.091	0.1	0.09
2/9/2010	2	1	11	#	A	30	30	30	29.99	0.184	0.186	0.15	0.16
2/9/2010	2	1	23	#	B	30.01	30	29.98	29.98	0.136	0.142	0.13	0.12
2/9/2010	2	1	8	#	B	30	30	30.01	29.99	0.081	0.076	0.1	0.08
2/9/2010	2	1	9	#	A	30	29.99	30	29.99	0.091	0.085	0.1	0.09

2/9/2010	2	1	16	#	A	30	30.01	29.99	30.01	0.099	0.097	0.09	0.09
2/9/2010	2	1	17	#	B	29.98	29.99	30.02	29.98	0.241	0.237	0.27	0.26
2/9/2010	2	1	3	#	A	29.98	29.99	30.02	30	0.103	0.112	0.12	0.11
2/9/2010	2	1	4	#	B	30.01	30.02	30.02	30	0.187	0.175	0.28	0.18
2/9/2010	2	1	10	#	A	30.01	29.98	29.99	3002	0.163	0.163	0.14	0.14
2/9/2010	2	1	19	#	B	29.98	29.99	30.01	30	0.336	0.348	0.29	0.3
2/11/2010	2	3	1	1	B	29.99	30	29.98	30.02	0.793	0.788	0.88	0.85
2/11/2010	2	3	20	1	A	30.01	30.02	30.02	29.98	0.459	0.459	0.52	0.49
2/11/2010	2	3	4	2	A	30.01	29.98	29.98	29.99	0.156	0.151	0.19	0.19
2/11/2010	2	3	22	2	B	30	30.02	30.01	30.01	0.222	0.229	0.2	0.19
2/11/2010	2	3	13	3	A	30	30.01	30.01	30	0.407	0.39	0.41	0.38
2/11/2010	2	3	26	3	B	29.98	30	30	30	0.373	0.369	0.29	0.3
2/11/2010	2	3	11	4	A	30	29.99	30	30.02	0.078	0.072	0.1	0.1
2/11/2010	2	3	24	4	B	29.98	29.99	29.98	29.99	0.115	0.114	0.11	0.11
2/11/2010	2	3	14	5	B	30.02	30.02	30.03	29.99	0.105	0.106	0.11	0.09
2/11/2010	2	3	16	5	A	29.99	30	30.01	30.02	0.091	0.086	0.1	0.09
2/11/2010	2	3	15	6	B	30.02	30.02	30.01	29.99	0.136	0.095	0.1	0.1
2/11/2010	2	3	21	6	A	30	30	29.99	30.01	0.109	0.088	0.1	0.09
2/11/2010	2	3	9	7	B	30.01	30.01	30.01	30.01	0.214	0.22	0.25	0.25
2/11/2010	2	3	17	7	A	30	29.99	29.98	29.99	0.331	0.321	0.34	0.33
2/11/2010	2	3	10	8	B	29.98	29.98	29.98	30.02	0.132	0.127	0.12	0.11
2/11/2010	2	3	28	8	A	30.01	29.99	29.98	30.02	0.117	0.126	0.11	0.12
2/11/2010	2	3	5	9	A	29.99	30.02	30	29.98	0.227	0.228	0.25	0.26
2/11/2010	2	3	25	9	B	29.99	30.01	30	30.01	0.316	0.31	0.28	0.28
2/11/2010	2	3	6	#	A	30.02	30.02	30	29.98	0.147	0.155	0.15	0.15
2/11/2010	2	3	12	#	B	30.01	29.99	30.01	29.98	0.144	0.134	0.17	0.16
2/11/2010	2	3	8	#	B	29.98	30.03	29.99	30.02	0.285	0.269	0.27	0.29
2/11/2010	2	3	18	#	A	29.99	30.02	30.01	30.02	0.237	0.215	0.25	0.24
2/11/2010	2	3	3	#	B	30.01	30.03	30	29.98	0.126	0.136	0.14	0.13
2/11/2010	2	3	27	#	A	30	30.01	30.02	29.98	0.171	0.152	0.14	0.15
2/11/2010	2	3	7	#	B	29.98	29.97	30.01	30.01	0.257	0.24	0.28	0.26
2/11/2010	2	3	23	#	A	30	30.01	30.02	30	0.54	0.509	0.5	0.5
2/11/2010	2	3	2	#	B	29.99	30	30.01	29.99	0.269	0.281	0.33	0.3

2/11/2010	2	3	19	#	A	29.99	30	29.99	30	0.252	0.271	0.38	0.38
2/13/2010	2	5	11	1	B	30.01	30.02	30.02	30	0.988	0.966	0.94	0.95
2/13/2010	2	5	13	1	A	29.98	30	29.98	30.01	0.092	0.094	0.09	0.09
2/13/2010	2	5	7	2	A	29.99	29.99	30	30	0.181	0.183	0.19	0.19
2/13/2010	2	5	21	2	B	30.02	30.01	30.02	30	0.143	0.122	0.14	0.12
2/13/2010	2	5	2	3	A	30.01	29.99	30.01	30	0.412	0.401	0.4	0.4
2/13/2010	2	5	3	3	B	30.01	29.99	30.02	29.99	0.438	0.447	0.51	0.51
2/13/2010	2	5	17	4	B	30.01	30.01	30.01	29.98	0.107	0.094	0.1	0.11
2/13/2010	2	5	24	4	A	30.02	30.02	29.98	29.98	0.088	0.089	0.07	0.08
2/13/2010	2	5	6	5	A	29.99	30.02	30.01	30.02	0.083	0.086	0.08	0.09
2/13/2010	2	5	27	5	B	29.98	29.99	30.01	29.99	0.164	0.187	0.13	0.12
2/13/2010	2	5	12	6	B	29.99	30.02	30.01	29.99	0.102	0.097	0.12	0.13
2/13/2010	2	5	28	6	A	30.01	29.99	29.98	30	.	.	.	.
2/13/2010	2	5	1	7	A	30	30.01	30.02	29.99	0.25	0.249	0.23	0.25
2/13/2010	2	5	25	7	B	29.99	29.98	30	30	0.351	0.333	0.27	0.28
2/13/2010	2	5	9	8	B	29.99	30.02	29.98	30	0.153	0.143	0.12	0.12
2/13/2010	2	5	23	8	A	29.99	29.98	30	30.02	0.096	0.112	0.1	0.1
2/13/2010	2	5	5	9	B	30.02	30.02	30.02	30	0.279	0.278	0.27	0.28
2/13/2010	2	5	14	9	A	30.01	29.99	29.99	30	0.355	0.343	0.35	0.35
2/13/2010	2	5	4	#	B	29.99	30	30.02	29.99	0.124	0.124	0.13	0.13
2/13/2010	2	5	10	#	A	29.99	30.01	30	30	0.153	0.146	0.13	0.13
2/13/2010	2	5	18	#	A	30.02	29.99	30	30	0.393	0.385	0.31	0.31
2/13/2010	2	5	22	#	B	30.02	29.99	30	29.98	0.229	0.222	0.23	0.25
2/13/2010	2	5	16	#	B	29.99	29.99	30.01	29.98	0.178	0.169	0.16	0.16
2/13/2010	2	5	20	#	A	30.02	30	29.98	29.99	0.178	0.199	0.17	0.18
2/13/2010	2	5	19	#	A	29.98	29.99	29.98	30	0.282	0.304	0.28	0.36
2/13/2010	2	5	26	#	B	30.01	30.02	30.01	30	0.601	0.61	0.58	0.55
2/13/2010	2	5	8	#	A	29.99	30.02	29.98	30.02	0.204	0.208	0.19	0.2
2/13/2010	2	5	15	#	B	30	29.99	29.98	30.02	0.232	0.204	0.22	0.2
2/15/2010	3	0	11	1	B	29.98	30.02	29.98	30	0.192	0.192	0.19	0.19
2/15/2010	3	0	18	1	A	30.02	30	29.98	30	0.298	0.311	0.31	0.31
2/15/2010	3	0	4	2	B	29.98	30	30.02	29.99	0.081	0.083	0.08	0.08
2/15/2010	3	0	22	2	A	30	30	30.02	30.01	0.085	0.096	0.07	0.07

2/15/2010	3	0	21	3	B	30	30	30.01	30.01	0.1	0.1	0.11	0.11
2/15/2010	3	0	25	3	A	29.99	30	30.01	29.99	0.101	0.087	0.07	0.1
2/15/2010	3	0	9	4	B	30.03	30.03	29.97	30	0.077	0.077	0.08	0.08
2/15/2010	3	0	13	4	A	30	30.03	30.03	29.99	0.076	0.077	0.08	0.08
2/15/2010	3	0	15	5	B	30.03	29.99	29.99	29.98	0.062	0.064	0.06	0.06
2/15/2010	3	0	24	5	A	30	30.02	29.98	30.01	0.064	0.067	0.06	0.06
2/15/2010	3	0	2	6	B	30.02	30.01	30.02	30	0.093	0.088	0.08	0.08
2/15/2010	3	0	27	6	A	29.98	30.02	29.99	29.99	0.066	0.075	0.06	0.07
2/15/2010	3	0	1	7	B	30	30.02	29.97	29.98	0.097	0.08	0.08	0.08
2/15/2010	3	0	26	7	A	30.01	30	30.02	30	0.098	0.102	0.08	0.09
2/15/2010	3	0	5	8	A	29.98	29.99	30	30	0.074	0.072	0.08	0.08
2/15/2010	3	0	10	8	B	30.01	30.01	29.98	29.97	0.075	0.067	0.07	0.08
2/15/2010	3	0	28	8	B	29.99	30.02	30.02	30.02	0.081	0.079	0.09	0.09
2/15/2010	3	0	17	9	A	30	29.99	30.01	29.98	0.098	0.096	0.09	0.09
2/15/2010	3	0	12	#	B	30.01	30.02	29.97	30.01	0.076	0.075	0.08	0.08
2/15/2010	3	0	16	#	A	29.98	30	30.01	30	0.081	0.075	0.07	0.06
2/15/2010	3	0	8	#	B	29.98	29.99	30.01	30.01	0.091	0.094	0.09	0.1
2/15/2010	3	0	23	#	A	30.02	30	29.99	30.02	0.078	0.078	0.07	0.08
2/15/2010	3	0	14	#	A	30.01	29.98	29.97	30.01	0.073	0.083	0.08	0.08
2/15/2010	3	0	19	#	B	30.03	30	30.03	30.02	0.092	0.086	0.08	0.08
2/15/2010	3	0	3	#	B	29.99	30.03	30	30	0.122	0.12	0.13	0.12
2/15/2010	3	0	6	#	A	29.99	29.98	30	29.99	0.13	0.122	0.13	0.13
2/15/2010	3	0	7	#	A	30.02	30	29.99	30	0.079	0.074	0.08	0.08
2/15/2010	3	0	20	#	B	30.01	30.02	29.99	30	0.098	0.098	0.09	0.09
2/16/2010	3	1	11	1	B	30.02	30	30.02	30	0.463	0.463	0.49	0.43
2/16/2010	3	1	22	1	A	29.99	30.02	30	30.03	0.458	0.512	0.42	0.39
2/16/2010	3	1	5	2	A	30.01	29.99	29.98	29.98	0.155	0.148	0.15	0.15
2/16/2010	3	1	28	2	B	30.03	30.02	30	30.02	0.211	0.213	0.22	0.23
2/16/2010	3	1	16	3	B	29.99	30.01	30	30.02	0.271	0.246	0.22	0.22
2/16/2010	3	1	18	3	A	30.02	30.01	30	30.01	0.257	0.255	0.28	0.29
2/16/2010	3	1	9	4	A	30	30	30.01	30.03	0.077	0.075	0.09	0.08
2/16/2010	3	1	26	4	B	30	29.98	30.03	29.97	0.074	0.075	0.08	0.07
2/16/2010	3	1	6	5	A	30.02	29.98	29.98	30.02	0.054	0.052	0.06	0.06

2/16/2010	3	1	24	5	B	30	30.02	30.03	30.01	0.072	0.069	0.07	0.07
2/16/2010	3	1	14	6	A	30.02	30	30	30.01	0.067	0.062	0.08	0.06
2/16/2010	3	1	17	6	B	30.02	30.01	30.02	30	0.068	0.064	0.07	0.06
2/16/2010	3	1	19	7	B	30.01	30.01	30	30.02	0.157	0.16	0.22	0.21
2/16/2010	3	1	27	7	A	30.02	29.98	30.01	30.01	0.218	0.227	0.19	0.21
2/16/2010	3	1	3	8	B	29.99	30	29.99	29.98	0.098	0.094	0.08	0.09
2/16/2010	3	1	4	8	A	30	30.01	30	30.02	0.107	0.103	0.08	0.08
2/16/2010	3	1	1	9	A	30.01	30.01	29.99	29.99	0.195	0.221	0.19	0.17
2/16/2010	3	1	7	9	B	30.01	29.98	29.99	29.99	0.144	0.161	0.14	0.13
2/16/2010	3	1	8	#	B	29.98	30	29.99	30.01	0.092	0.095	0.1	0.1
2/16/2010	3	1	15	#	A	30.01	30	29.99	30	0.088	0.089	0.11	0.1
2/16/2010	3	1	10	#	B	30.01	30	30.01	30.01	0.18	0.176	0.18	0.18
2/16/2010	3	1	13	#	A	30.01	29.98	30.01	30.01	0.174	0.187	0.18	0.19
2/16/2010	3	1	21	#	B	29.98	30.01	29.99	30	0.111	0.103	0.12	0.12
2/16/2010	3	1	23	#	A	29.98	29.98	29.98	30.02	0.132	0.136	0.1	0.1
2/16/2010	3	1	2	#	A	29.99	30	29.99	29.97	0.302	0.329	0.35	0.38
2/16/2010	3	1	12	#	B	29.99	30	29.98	29.98	0.367	0.341	0.36	0.38
2/16/2010	3	1	20	#	B	29.98	29.98	30.01	30.01	0.211	0.203	0.25	0.26
2/16/2010	3	1	25	#	A	30.01	30.02	30	29.99	0.275	0.291	0.24	0.24
2/18/2010	3	3	8	1	B	29.99	30.02	30.01	29.99	0.828	0.817	0.93	0.89
2/18/2010	3	3	19	1	A	29.99	30.01	30.02	29.98	0.799	0.832	0.87	0.91
2/18/2010	3	3	4	2	B	30.02	30.03	29.99	29.99	0.31	0.333	0.22	0.22
2/18/2010	3	3	12	2	A	30	30.02	30.02	30.01	0.242	0.226	0.23	0.22
2/18/2010	3	3	6	3	B	30	30	30	29.99	0.458	0.442	0.45	0.44
2/18/2010	3	3	25	3	A	29.99	30.01	30	30	0.336	0.324	0.31	0.32
2/18/2010	3	3	16	4	A	30.03	30	29.99	29.97	0.091	0.095	0.1	0.09
2/18/2010	3	3	18	4	B	29.99	29.98	30.02	29.99	0.084	0.09	0.09	0.09
2/18/2010	3	3	9	5	B	30.01	30.01	30.03	30.02	0.082	0.072	0.07	0.08
2/18/2010	3	3	13	5	A	29.99	30.01	29.99	30	0.067	0.072	0.08	0.07
2/18/2010	3	3	14	6	A	29.99	30	30.01	30	0.074	0.073	0.09	0.08
2/18/2010	3	3	21	6	B	30	30.01	30.01	29.99	0.085	0.087	0.07	0.09
2/18/2010	3	3	23	7	A	29.98	30.01	29.99	30	0.445	0.476	0.41	0.42
2/18/2010	3	3	26	7	B	30.02	30	30.02	30	0.329	0.373	0.36	0.32

2/18/2010	3	3	5	8	B	30.01	30	30	30.01	0.544	0.544	0.57	0.55
2/18/2010	3	3	24	8	A	30.02	29.98	29.99	29.99	0.144	0.143	0.17	0.17
2/18/2010	3	3	2	9	B	29.98	30.01	30.01	30	0.284	0.272	0.36	0.31
2/18/2010	3	3	10	9	A	30	30.02	30.01	30.01	0.163	0.192	0.16	0.17
2/18/2010	3	3	1	#	A	30	30.01	30	29.99	0.246	0.267	0.22	0.23
2/18/2010	3	3	11	#	B	30	30.02	29.98	29.99	0.152	0.139	0.13	0.13
2/18/2010	3	3	20	#	B	30	30.02	29.98	29.98	0.344	0.358	0.31	0.32
2/18/2010	3	3	27	#	A	30.02	30.01	29.98	30.02	0.319	0.313	0.35	0.34
2/18/2010	3	3	3	#	B	30	29.98	30.02	30	0.185	0.175	0.19	0.19
2/18/2010	3	3	22	#	A	29.98	30.01	29.99	30.01	0.221	0.209	0.22	0.2
2/18/2010	3	3	7	#	A	29.98	29.98	30.02	29.99	0.778	0.755	0.59	0.67
2/18/2010	3	3	15	#	B	30.03	30	30	30	0.651	0.609	0.59	0.62
2/18/2010	3	3	17	#	A	30.02	29.98	29.99	29.99	0.38	0.388	0.36	0.36
2/18/2010	3	3	28	#	B	30.02	30.01	30.01	30	0.138	0.131	0.13	0.14
2/20/2010	3	5	22	1	B	29.98	30.01	29.98	29.99	0.901	0.841	0.77	0.74
2/20/2010	3	5	25	1	A	30	30.01	29.99	30.02	0.954	0.961	1	1.04
2/20/2010	3	5	15	2	B	30	30.03	30.03	30.03	0.23	0.226	0.24	0.22
2/20/2010	3	5	28	2	A	30.01	29.98	29.99	30	0.28	0.36	0.25	0.25
2/20/2010	3	5	3	3	A	29.99	30	30.02	30.02	0.633	0.67	0.7	0.7
2/20/2010	3	5	10	3	B	29.98	30	30	30.02	0.59	0.636	0.66	0.61
2/20/2010	3	5	6	4	B	29.99	30.02	30.02	30.01	0.088	0.081	0.08	0.09
2/20/2010	3	5	19	4	A	30.01	30.02	29.99	30	0.084	0.085	0.11	0.11
2/20/2010	3	5	9	5	A	29.99	29.99	30	30.01	0.073	0.07	0.07	0.07
2/20/2010	3	5	24	5	B	29.99	29.99	30	29.99	0.074	0.071	0.06	0.06
2/20/2010	3	5	8	6	B	30.02	30.01	30.02	29.99	0.072	0.067	0.07	0.07
2/20/2010	3	5	20	6	A	29.98	30	30	30.01	0.069	0.078	0.07	0.07
2/20/2010	3	5	5	7	B	29.99	30.01	29.98	29.99	0.399	0.41	0.39	0.39
2/20/2010	3	5	17	7	A	30	30	29.97	29.99	0.331	0.334	0.43	0.39
2/20/2010	3	5	18	8	A	30.01	30.03	30.03	29.99	0.165	0.174	0.17	0.19
2/20/2010	3	5	27	8	B	30	30	30	30	0.184	0.166	0.16	0.19
2/20/2010	3	5	1	9	A	30.01	30.02	29.99	29.98	0.398	0.388	0.45	0.42
2/20/2010	3	5	11	9	B	29.99	29.98	30.01	30.03	0.284	0.264	0.31	0.33
2/20/2010	3	5	4	#	A	30.02	30.01	29.99	30	0.164	0.181	0.18	0.17

2/20/2010	3	5	21	#	B	29.99	30	30.02	30.01	0.157	0.169	0.16	0.15
2/20/2010	3	5	12	#	A	30.03	30.03	29.99	30.02	0.466	0.437	0.42	0.41
2/20/2010	3	5	23	#	B	30.01	30	30.01	30.02	0.323	0.332	0.37	0.35
2/20/2010	3	5	2	#	A	30	30.02	29.98	30	0.212	0.207	0.19	0.19
2/20/2010	3	5	13	#	B	30.01	30	30.01	30.02	0.203	0.196	0.24	0.23
2/20/2010	3	5	7	#	B	30.01	30.01	29.98	30.02	0.902	0.886	0.82	0.8
2/20/2010	3	5	16	#	A	30.01	30.02	30.02	30	0.911	0.853	0.82	0.79
2/20/2010	3	5	14	#	A	29.98	29.99	29.99	30	0.528	0.531	0.5	0.53
2/20/2010	3	5	26	#	B	30.02	30	30.01	29.99	0.509	0.541	0.51	0.46

pH

Date	Batch	Day	Order	Rand	Trt	Patty	pH1	pH2	pH3
4/18/2010	1	0	1	360	3	A	5.5	5.59	5.65
4/18/2010	1	0	2	113	3	B	5.67	5.66	5.62
4/18/2010	1	0	3	154	4	A	5.67	5.67	5.66
4/18/2010	1	0	4	153	4	B	5.71	5.69	5.67
4/18/2010	1	0	5	998	1	A	5.72	5.66	5.66
4/18/2010	1	0	6	963	1	B	5.68	5.65	5.67
4/18/2010	1	0	7	943	6	A	5.72	5.71	5.77
4/18/2010	1	0	8	817	6	B	5.71	5.73	5.72
4/18/2010	1	0	9	964	2	A	5.63	5.65	5.67
4/18/2010	1	0	10	780	2	B	5.64	5.64	5.67
4/18/2010	1	0	11	676	5	A	5.74	5.7	5.69
4/18/2010	1	0	12	910	5	B	5.73	5.73	5.69
4/19/2010	1	1	1	954	2	B	5.64	5.61	5.6
4/19/2010	1	1	2	211	3	A	5.62	5.62	5.6
4/19/2010	1	1	3	182	4	A	5.67	5.7	5.7
4/19/2010	1	1	4	686	6	A	5.66	5.7	5.7
4/19/2010	1	1	5	797	3	B	5.64	5.62	5.64
4/19/2010	1	1	6	223	5	A	5.68	5.66	5.72
4/19/2010	1	1	7	755	4	B	5.72	5.67	5.67
4/19/2010	1	1	8	728	1	B	5.63	5.63	5.63
4/19/2010	1	1	9	371	2	A	5.65	5.62	5.63
4/19/2010	1	1	10	777	6	B	5.68	5.67	5.7
4/19/2010	1	1	11	761	1	A	5.62	5.65	5.63
4/19/2010	1	1	12	839	5	B	5.67	5.67	5.66
4/25/2010	2	0	1	183	2	A	5.75	5.79	5.78
4/25/2010	2	0	2	323	2	B	5.81	5.82	5.77
4/25/2010	2	0	3	196	4	A	5.76	5.72	5.72
4/25/2010	2	0	4	128	4	B	5.74	5.77	5.76
4/25/2010	2	0	5	319	5	A	5.6	5.68	5.8
4/25/2010	2	0	6	423	5	B	5.77	5.79	5.76
4/25/2010	2	0	7	881	1	A	5.53	5.82	5.82
4/25/2010	2	0	8	677	1	B	5.75	5.79	5.82
4/25/2010	2	0	9	313	3	A	5.74	5.72	5.76
4/25/2010	2	0	10	639	3	B	5.75	5.83	5.77
4/25/2010	2	0	11	867	6	A	5.75	5.78	5.77
4/25/2010	2	0	12	69	6	B	5.8	5.77	5.78
4/26/2010	2	1	1	445	6	B	5.76	5.77	5.77
4/26/2010	2	1	2	66	5	B	5.86	5.84	5.85
4/26/2010	2	1	3	560	2	B	5.88	5.87	5.73
4/26/2010	2	1	4	244	3	B	5.59	5.86	5.88
4/26/2010	2	1	5	826	6	A	5.88	5.88	5.87
4/26/2010	2	1	6	740	5	A	5.87	5.86	5.86
4/26/2010	2	1	7	514	1	A	5.86	5.87	5.86
4/26/2010	2	1	8	841	2	A	5.89	5.87	5.87

4/26/2010	2	1	9	908	4	A	5.84	5.81	5.83
4/26/2010	2	1	10	928	3	A	5.82	5.85	5.86
4/26/2010	2	1	11	930	4	B	5.86	5.85	5.85
4/26/2010	2	1	12	254	1	B	5.86	5.85	5.86
5/2/2010	3	0	1	857	4	A	5.9	5.91	5.9
5/2/2010	3	0	2	399	4	B	5.85	5.8	5.85
5/2/2010	3	0	3	878	1	A	5.81	5.83	5.65
5/2/2010	3	0	4	583	1	B	5.89	5.79	5.88
5/2/2010	3	0	5	889	2	A	5.79	5.86	5.8
5/2/2010	3	0	6	779	2	B	5.89	5.86	5.88
5/2/2010	3	0	7	435	3	A	5.91	5.95	5.88
5/2/2010	3	0	8	192	3	B	5.91	5.94	5.94
5/2/2010	3	0	9	412	5	A	5.86	5.84	5.9
5/2/2010	3	0	10	558	5	B	5.86	5.88	5.89
5/2/2010	3	0	11	802	6	A	5.87	5.88	5.9
5/2/2010	3	0	12	917	6	B	5.9	5.89	5.87
5/3/2010	3	1	1	714	3	A	5.9	5.86	5.84
5/3/2010	3	1	2	501	2	B	5.87	5.87	5.8
5/3/2010	3	1	3	506	4	A	5.91	5.87	5.93
5/3/2010	3	1	4	531	6	B	5.91	5.89	5.89
5/3/2010	3	1	5	955	3	B	5.9	5.92	5.92
5/3/2010	3	1	6	742	5	B	5.95	5.92	5.91
5/3/2010	3	1	7	611	1	A	5.93	5.91	5.89
5/3/2010	3	1	8	601	2	A	5.89	5.92	5.94
5/3/2010	3	1	9	418	1	B	5.94	5.93	5.94
5/3/2010	3	1	10	285	5	A	5.94	5.92	5.94
5/3/2010	3	1	11	272	6	A	5.94	5.94	5.95
5/3/2010	3	1	12	152	4	B	5.95	5.93	5.92

MINOLTA

Date	Batch	Day	Order	RandNumb	Trt	Patty	Minolta ID	L	a	b
4/18/2010	1	0	1	360	3	A	2	58.69	25.08	13.99
4/18/2010	1	0	1	360	3	A	3	57.15	25.84	13.37
4/18/2010	1	0	1	360	3	A	4	57.47	23.61	12.3
4/18/2010	1	0	2	113	3	B	5	57.19	26.08	13.73
4/18/2010	1	0	2	113	3	B	6	56.4	23.02	12.89
4/18/2010	1	0	2	113	3	B	7	58.33	23.8	12.53
4/18/2010	1	0	3	154	4	A	8	58.38	23.8	12.26
4/18/2010	1	0	3	154	4	A	9	57.38	25.41	13.34
4/18/2010	1	0	3	154	4	A	10	57.58	24.2	12.97
4/18/2010	1	0	4	153	4	B	11	57.61	24.34	12.81
4/18/2010	1	0	4	153	4	B	12	57.18	24.55	13.43
4/18/2010	1	0	4	153	4	B	13	56.52	25.76	14.08
4/18/2010	1	0	5	998	1	A	14	55.73	25.69	12.76
4/18/2010	1	0	5	998	1	A	15	57.38	24.92	12.79
4/18/2010	1	0	5	998	1	A	16	60.16	23.2	11.42
4/18/2010	1	0	6	963	1	B	17	56.72	25.57	12.85
4/18/2010	1	0	6	963	1	B	18	62.41	22.37	10.17
4/18/2010	1	0	6	963	1	B	19	61.6	23.62	12.86
4/18/2010	1	0	7	943	6	A	20	53.02	22.4	11.42
4/18/2010	1	0	7	943	6	A	21	53.21	21.92	11.05
4/18/2010	1	0	7	943	6	A	22	53.97	21.42	11.74
4/18/2010	1	0	8	817	6	B	23	51.57	22.37	11.62
4/18/2010	1	0	8	817	6	B	24	53.28	21.94	10.98
4/18/2010	1	0	8	817	6	B	25	56.44	22.83	10.9
4/18/2010	1	0	9	964	2	A	26	60.36	23.96	12.3
4/18/2010	1	0	9	964	2	A	27	58.32	23.09	11.27
4/18/2010	1	0	9	964	2	A	28	56.35	24.59	12.22
4/18/2010	1	0	10	780	2	B	29	57.08	25.81	13.26
4/18/2010	1	0	10	780	2	B	30	58.78	23.08	12.14

4/18/2010	1	0	10	780	2	B	31	60.6	24.94	13.8
4/18/2010	1	0	11	676	5	A	32	57.74	22.91	11.85
4/18/2010	1	0	11	676	5	A	33	56.36	24.42	12.96
4/18/2010	1	0	11	676	5	A	34	57.7	24.54	13.39
4/18/2010	1	0	12	910	5	B	35	56.35	22.77	10.56
4/18/2010	1	0	12	910	5	B	36	58.09	23.73	11.76
4/18/2010	1	0	12	910	5	B	37	56.37	25.37	13.42
4/19/2010	1	1	1	954	2	B	1	57.22	20.28	9.91
4/19/2010	1	1	1	954	2	B	2	54.99	22.69	12.25
4/19/2010	1	1	1	954	2	B	3	58.61	20.36	11.45
4/19/2010	1	1	2	211	3	A	4	57.71	21.98	12.45
4/19/2010	1	1	2	211	3	A	5	58.28	22.15	13.15
4/19/2010	1	1	2	211	3	A	6	55.39	20.81	11.04
4/19/2010	1	1	3	182	4	A	9	58.86	20.58	12.39
4/19/2010	1	1	3	182	4	A	10	57.13	23.57	13.08
4/19/2010	1	1	3	182	4	A	11	55.28	19.92	10.65
4/19/2010	1	1	4	686	6	A	12	55.22	19.09	10.7
4/19/2010	1	1	4	686	6	A	13	52.36	16.25	9.28
4/19/2010	1	1	4	686	6	A	14	60.31	14.43	9.31
4/19/2010	1	1	5	797	3	B	15	57.78	19.21	9.84
4/19/2010	1	1	5	797	3	B	16	61.66	18.39	10
4/19/2010	1	1	5	797	3	B	17	60.15	19.63	10.87
4/19/2010	1	1	6	223	5	A	18	56.04	19.23	10.9
4/19/2010	1	1	6	223	5	A	19	56.88	19.5	10.61
4/19/2010	1	1	6	223	5	A	20	56.11	20.66	12.12
4/19/2010	1	1	7	755	4	B	21	61.57	18.68	9.9
4/19/2010	1	1	7	755	4	B	22	56.62	20.71	10.91
4/19/2010	1	1	7	755	4	B	23	55.69	21.75	12.3
4/19/2010	1	1	8	728	1	B	24	56.76	19.86	10.75
4/19/2010	1	1	8	728	1	B	25	57.21	20.2	10.43
4/19/2010	1	1	8	728	1	B	26	56.4	21.11	11.69
4/19/2010	1	1	9	371	2	A	27	59.13	19.18	9.5
4/19/2010	1	1	9	371	2	A	28	58.73	17.32	8.31

4/19/2010	1	1	9	371	2	A	29	56.43	21.44	12.18
4/19/2010	1	1	10	777	6	B	30	55.59	15.7	7.54
4/19/2010	1	1	10	777	6	B	31	56.45	16.36	9.12
4/19/2010	1	1	10	777	6	B	32	54.56	15.95	8.21
4/19/2010	1	1	11	761	1	A	33	60.33	20.3	11.64
4/19/2010	1	1	11	761	1	A	34	58.97	19.34	10.74
4/19/2010	1	1	11	761	1	A	35	58.16	20.95	11.19
4/19/2010	1	1	12	839	5	B	36	57.46	19.83	10.82
4/19/2010	1	1	12	839	5	B	37	55.1	20.86	11.19
4/19/2010	1	1	12	839	5	B	38	56.68	18.83	10.1
4/25/2010	2	0	1	183	2	A	1	59.15	24.83	10.6
4/25/2010	2	0	1	183	2	A	2	57.49	26.48	12.22
4/25/2010	2	0	1	183	2	A	3	59.72	25.08	10.98
4/25/2010	2	0	2	323	2	B	4	59.62	26.29	12.39
4/25/2010	2	0	2	323	2	B	5	57.16	24.56	10.69
4/25/2010	2	0	2	323	2	B	6	57.33	26.72	12.41
4/25/2010	2	0	3	196	4	A	7	58.1	21.85	9.43
4/25/2010	2	0	3	196	4	A	8	58.37	24.97	13.23
4/25/2010	2	0	3	196	4	A	9	54.78	23.49	11.55
4/25/2010	2	0	4	128	4	B	10	53.38	24.89	11.98
4/25/2010	2	0	4	128	4	B	11	55.7	26.18	12.71
4/25/2010	2	0	4	128	4	B	12	55.19	25.75	12.87
4/25/2010	2	0	5	319	5	A	13	56.71	24.3	12.4
4/25/2010	2	0	5	319	5	A	14	52.79	27.22	13.82
4/25/2010	2	0	5	319	5	A	15	56.88	24.29	11.57
4/25/2010	2	0	6	423	5	B	16	54.81	25.71	12.85
4/25/2010	2	0	6	423	5	B	17	57.8	23	10.38
4/25/2010	2	0	6	423	5	B	18	52.14	19.97	11.69
4/25/2010	2	0	7	881	1	A	19	55.37	24.87	12.54
4/25/2010	2	0	7	881	1	A	20	58.7	25.38	12.77
4/25/2010	2	0	7	881	1	A	21	54.26	27.24	13.33
4/25/2010	2	0	8	677	1	B	22	57.07	25.04	12.65
4/25/2010	2	0	8	677	1	B	24	56.78	25	13.02

4/25/2010	2	0	8	677	1	B	25	60.11	23.52	12.29
4/25/2010	2	0	9	313	3	A	26	57.26	23.45	11.96
4/25/2010	2	0	9	313	3	A	27	54.47	26.37	13.35
4/25/2010	2	0	9	313	3	A	28	56.6	22.99	10.47
4/25/2010	2	0	10	639	3	B	29	58.21	22.35	11.87
4/25/2010	2	0	10	639	3	B	30	57.16	25.44	12.66
4/25/2010	2	0	10	639	3	B	31	54.21	27.66	13.55
4/25/2010	2	0	11	867	6	A	32	53.77	20.05	10.77
4/25/2010	2	0	11	867	6	A	33	52.8	20.27	9.77
4/25/2010	2	0	11	867	6	A	34	51.81	16.78	7.82
4/25/2010	2	0	12	69	6	B	35	51.93	21.45	10.13
4/25/2010	2	0	12	69	6	B	36	52.16	17.56	7.77
4/25/2010	2	0	12	69	6	B	37	54.49	19.79	10.78
4/26/2010	2	1	1	445	6	B	1	56.41	19.27	9.08
4/26/2010	2	1	1	445	6	B	2	54.93	15.39	6.89
4/26/2010	2	1	1	445	6	B	3	54.05	16.89	7.81
4/26/2010	2	1	2	66	5	B	4	58.38	19.52	9.7
4/26/2010	2	1	2	66	5	B	5	56.04	19.26	8.65
4/26/2010	2	1	2	66	5	B	6	56.7	20.86	11.89
4/26/2010	2	1	3	560	2	B	8	56.46	21.33	9.8
4/26/2010	2	1	3	560	2	B	9	59.52	22.48	11.68
4/26/2010	2	1	3	560	2	B	10	57.65	22.92	11.05
4/26/2010	2	1	4	244	3	B	11	58.61	23.42	11.58
4/26/2010	2	1	4	244	3	B	12	57.88	23.25	10.87
4/26/2010	2	1	4	244	3	B	13	55.91	26.08	13.61
4/26/2010	2	1	5	826	6	A	14	52.18	18.99	9.36
4/26/2010	2	1	5	826	6	A	15	58.16	18.12	9.15
4/26/2010	2	1	5	826	6	A	16	59.16	17.15	9.58
4/26/2010	2	1	6	740	5	A	17	57.65	20.42	10.2
4/26/2010	2	1	6	740	5	A	18	57.19	20.65	11.07
4/26/2010	2	1	6	740	5	A	19	58.07	20.03	11.16
4/26/2010	2	1	7	514	1	A	20	55.83	22.29	10.69
4/26/2010	2	1	7	514	1	A	21	56.45	20.99	9.48

4/26/2010	2	1	7	514	1	A	22	56.9	24.5	13.29
4/26/2010	2	1	8	841	2	A	23	57.87	20.79	11.67
4/26/2010	2	1	8	841	2	A	24	57.19	22.74	11.21
4/26/2010	2	1	8	841	2	A	25	53.81	24.15	12.63
4/26/2010	2	1	9	908	4	A	26	58.63	20.38	10.87
4/26/2010	2	1	9	908	4	A	27	54.67	22.44	11.28
4/26/2010	2	1	9	908	4	A	28	55.42	21.64	11.99
4/26/2010	2	1	10	928	3	A	29	55.6	23.88	12.17
4/26/2010	2	1	10	928	3	A	30	56.02	21.91	10.83
4/26/2010	2	1	10	928	3	A	31	57.95	23.32	11.96
4/26/2010	2	1	11	930	4	B	32	54.88	22.47	11.33
4/26/2010	2	1	11	930	4	B	33	57.88	19.88	10.42
4/26/2010	2	1	11	930	4	B	34	58.18	20.07	11.09
4/26/2010	2	1	12	254	1	B	35	57.59	22.39	12.06
4/26/2010	2	1	12	254	1	B	36	52.98	23.2	10.87
4/26/2010	2	1	12	254	1	B	37	57.82	19.92	10.68
5/2/2010	3	0	1	857	4	A	2	59.28	21.55	10.36
5/2/2010	3	0	1	857	4	A	3	52.12	26.14	11.88
5/2/2010	3	0	1	857	4	A	4	53.52	26.54	11.98
5/2/2010	3	0	2	399	4	B	5	50.55	28.07	12.47
5/2/2010	3	0	2	399	4	B	6	52.7	27.16	14.92
5/2/2010	3	0	2	399	4	B	7	49.75	27.68	13.75
5/2/2010	3	0	3	878	1	A	8	53.56	28.65	13.24
5/2/2010	3	0	3	878	1	A	9	55.53	25.98	13.06
5/2/2010	3	0	3	878	1	A	10	54.05	28.05	14.12
5/2/2010	3	0	4	583	1	B	11	53.75	27.52	12.66
5/2/2010	3	0	4	583	1	B	12	53.49	27.54	12.85
5/2/2010	3	0	4	583	1	B	13	52.18	29.89	15.26
5/2/2010	3	0	5	889	2	A	14	55.27	26	10.59
5/2/2010	3	0	5	889	2	A	15	53.87	28.55	14.1
5/2/2010	3	0	5	889	2	A	16	54.73	25.8	13.02
5/2/2010	3	0	6	779	2	B	17	50.94	28.33	13.08
5/2/2010	3	0	6	779	2	B	18	49	27.4	11.19

5/2/2010	3	0	6	779	2	B	19	52.31	27.3	12.9
5/2/2010	3	0	7	435	3	A	20	55.42	25.75	11.75
5/2/2010	3	0	7	435	3	A	21	53.85	26.62	12.74
5/2/2010	3	0	7	435	3	A	22	55.25	24.56	12.36
5/2/2010	3	0	8	192	3	B	23	52.83	23.02	10.17
5/2/2010	3	0	8	192	3	B	24	55.49	24.33	10.72
5/2/2010	3	0	8	192	3	B	25	55.4	27.46	12.19
5/2/2010	3	0	9	412	5	A	26	53.71	22.95	11.93
5/2/2010	3	0	9	412	5	A	27	51.76	21.8	8.09
5/2/2010	3	0	9	412	5	A	28	55.63	23.77	11.5
5/2/2010	3	0	10	558	5	B	29	55.83	20.19	9.9
5/2/2010	3	0	10	558	5	B	30	52.42	25.12	1.8
5/2/2010	3	0	10	558	5	B	31	50.4	25.39	11.92
5/2/2010	3	0	11	802	6	A	32	49.46	22.39	10.81
5/2/2010	3	0	11	802	6	A	33	51.28	16.02	6.05
5/2/2010	3	0	11	802	6	A	34	50.19	20.45	9.96
5/2/2010	3	0	12	917	6	B	35	51.51	20.52	8.97
5/2/2010	3	0	12	917	6	B	36	46.7	19.6	7.93
5/2/2010	3	0	12	917	6	B	37	48.43	19.89	9.14
5/3/2010	3	1	1	714	3	A	1	50.00	23.42	11.71
5/3/2010	3	1	1	714	3	A	2	55.83	24.83	13.38
5/3/2010	3	1	1	714	3	A	3	52.86	20.67	9.22
5/3/2010	3	1	2	501	2	B	4	57.53	18.64	8.43
5/3/2010	3	1	2	501	2	B	5	58.04	24.67	13.43
5/3/2010	3	1	2	501	2	B	6	53.34	23.34	11.18
5/3/2010	3	1	3	506	4	A	7	53.10	19.73	9.30
5/3/2010	3	1	3	506	4	A	8	50.49	22.89	10.85
5/3/2010	3	1	3	506	4	A	9	50.76	19.14	8.83
5/3/2010	3	1	4	531	6	B	10	51.02	17.03	7.59
5/3/2010	3	1	4	531	6	B	11	52.74	18.82	8.71
5/3/2010	3	1	4	531	6	B	12	48.37	19.14	9.29
5/3/2010	3	1	5	955	3	B	13	52.62	20.91	9.25
5/3/2010	3	1	5	955	3	B	14	48.75	26.70	13.70

5/3/2010	3	1	5	955	3	B	15	53.23	23.87	12.11
5/3/2010	3	1	6	742	5	B	16	51.16	20.66	9.48
5/3/2010	3	1	6	742	5	B	17	48.86	22.25	9.91
5/3/2010	3	1	6	742	5	B	18	53.94	20.85	10.28
5/3/2010	3	1	7	611	1	A	19	57.80	20.45	10.07
5/3/2010	3	1	7	611	1	A	20	48.93	20.06	8.76
5/3/2010	3	1	7	611	1	A	21	51.92	23.57	11.33
5/3/2010	3	1	8	601	2	A	22	52.76	22.32	10.08
5/3/2010	3	1	8	601	2	A	23	56.23	23.10	11.74
5/3/2010	3	1	8	601	2	A	24	51.51	22.94	10.10
5/3/2010	3	1	9	418	1	B	25	50.03	23.79	11.39
5/3/2010	3	1	9	418	1	B	26	52.83	23.17	11.61
5/3/2010	3	1	9	418	1	B	27	52.84	23.13	10.81
5/3/2010	3	1	10	285	5	A	28	54.57	20.75	9.13
5/3/2010	3	1	10	285	5	A	29	49.68	22.05	10.75
5/3/2010	3	1	10	285	5	A	30	53.05	19.12	9.30
5/3/2010	3	1	11	272	6	A	31	49.37	19.84	9.51
5/3/2010	3	1	11	272	6	A	32	49.68	16.83	7.89
5/3/2010	3	1	11	272	6	A	33	58.84	16.65	7.40
5/3/2010	3	1	12	152	4	B	34	53.74	20.04	8.51
5/3/2010	3	1	12	152	4	B	35	53.85	18.29	7.64
5/3/2010	3	1	12	152	4	B	36	51.09	19.07	11.79

SUBJECTIVE COLOR

Date	Batch	Day	Order	Panelist	RandNumb	Trt	Patty	Lean	Pdis	BrDis	Comments
4/18/2010	1	0	1	CHRISLY	360	3	A	7	0	0	
4/18/2010	1	0	2	CHRISLY	113	3	B	7	0	0	
4/18/2010	1	0	3	CHRISLY	154	4	A	6	0	0	
4/18/2010	1	0	4	CHRISLY	153	4	B	6	0	0	
4/18/2010	1	0	5	CHRISLY	998	1	A	6	0	0	
4/18/2010	1	0	6	CHRISLY	963	1	B	6	0	0	
4/18/2010	1	0	7	CHRISLY	943	6	A	3	0	0	Clumps of ingredient
4/18/2010	1	0	8	CHRISLY	817	6	B	3	0	0	Clumps of ingredient
4/18/2010	1	0	9	CHRISLY	964	2	A	6	0	0	
4/18/2010	1	0	10	CHRISLY	780	2	B	7	0	0	
4/18/2010	1	0	11	CHRISLY	676	5	A	5	0	0	
4/18/2010	1	0	12	CHRISLY	910	5	B	5	0	0	
4/18/2010	1	0	1	SARAH	360	3	A	7	0	0	
4/18/2010	1	0	2	SARAH	113	3	B	7	0	0	
4/18/2010	1	0	3	SARAH	154	4	A	7	0	0	
4/18/2010	1	0	4	SARAH	153	4	B	7	0	0	
4/18/2010	1	0	5	SARAH	998	1	A	7	0	0	
4/18/2010	1	0	6	SARAH	963	1	B	6	0	0	
4/18/2010	1	0	7	SARAH	943	6	A	5	0	0	Clumps of ingredient
4/18/2010	1	0	8	SARAH	817	6	B	5	0	0	Clumps of ingredient
4/18/2010	1	0	9	SARAH	964	2	A	6	0	0	
4/18/2010	1	0	10	SARAH	780	2	B	6	0	0	
4/18/2010	1	0	11	SARAH	676	5	A	6	0	0	
4/18/2010	1	0	12	SARAH	910	5	B	5	0	0	
4/18/2010	1	0	1	TABS	360	3	A	6	0	0	Light because fattier looking
4/18/2010	1	0	2	TABS	113	3	B	6	0	0	Light because fattier looking
4/18/2010	1	0	3	TABS	154	4	A	5	0	0	
4/18/2010	1	0	4	TABS	153	4	B	5	0	0	

4/18/2010	1	0	5	TABS	998	1	A	6	0	0	
4/18/2010	1	0	6	TABS	963	1	B	6	0	0	
4/18/2010	1	0	7	TABS	943	6	A	4	0	0	Darker because of ingredient clumping
4/18/2010	1	0	8	TABS	817	6	B	4	0	0	Darker because of ingredient clumping
4/18/2010	1	0	9	TABS	964	2	A	6	0	0	
4/18/2010	1	0	10	TABS	780	2	B	6	0	0	
4/18/2010	1	0	11	TABS	676	5	A	6	0	0	Light because fattier looking
4/18/2010	1	0	12	TABS	910	5	B	6	0	0	Light because fattier looking
4/19/2010	1	1	1	JAY	954	2	B	6	0	0	
4/19/2010	1	1	2	JAY	211	3	A	6	0	0	
4/19/2010	1	1	3	JAY	182	4	A	5	0	0	
4/19/2010	1	1	4	JAY	686	6	A	5	10	2	Lots of specks and 1 brown spot
4/19/2010	1	1	5	JAY	797	3	B	6	0	0	
4/19/2010	1	1	6	JAY	223	5	A	6	0	0	1 small spot of discoloration
4/19/2010	1	1	7	JAY	755	4	B	5	0	0	
4/19/2010	1	1	8	JAY	728	1	B	5	0	0	
4/19/2010	1	1	9	JAY	371	2	A	5	0	0	
4/19/2010	1	1	10	JAY	777	6	B	6	10	2	so many specks it looks brown
4/19/2010	1	1	11	JAY	761	1	A	5	0	0	
4/19/2010	1	1	12	JAY	839	5	B	6	0	0	2 small discolored spots
4/19/2010	1	1	1	TABS	954	2	B	5	0	0	
4/19/2010	1	1	2	TABS	211	3	A	5	0	0	
4/19/2010	1	1	3	TABS	182	4	A	6	0	0	Dark black specks
4/19/2010	1	1	4	TABS	686	6	A	4	30	4	Dark black specks
4/19/2010	1	1	5	TABS	797	3	B	5	10	2	
4/19/2010	1	1	6	TABS	223	5	A	5	0	0	1 discolored spot
4/19/2010	1	1	7	TABS	755	4	B	5	0	0	Dark black specks

4/19/2010	1	1	8	TABS	728	1	B	6	0	0	
4/19/2010	1	1	9	TABS	371	2	A	6	0	0	
4/19/2010	1	1	10	TABS	777	6	B	5	40	4	Dark black specks
4/19/2010	1	1	11	TABS	761	1	A	6	0	0	
4/19/2010	1	1	12	TABS	839	5	B	5	10	4	
4/19/2010	1	1	1	SHANNON	954	2	B	6	0	0	
4/19/2010	1	1	2	SHANNON	211	3	A	5	10	2	
4/19/2010	1	1	3	SHANNON	182	4	A	5	0	0	
4/19/2010	1	1	4	SHANNON	686	6	A	5	30	4	
4/19/2010	1	1	5	SHANNON	797	3	B	6	0	0	
4/19/2010	1	1	6	SHANNON	223	5	A	5	0	0	Small area of ingredient discoloration
4/19/2010	1	1	7	SHANNON	755	4	B	6	10	3	
4/19/2010	1	1	8	SHANNON	728	1	B	6	0	0	
4/19/2010	1	1	9	SHANNON	371	2	A	5	0	0	
4/19/2010	1	1	10	SHANNON	777	6	B	5	30	4	
4/19/2010	1	1	11	SHANNON	761	1	A	6	0	0	
4/19/2010	1	1	12	SHANNON	839	5	B	5	0	0	
4/25/2010	2	0	1	TABS	183	2	A	6	0	0	Bright Red
4/25/2010	2	0	2	TABS	323	2	B	6	0	0	Bright Red
4/25/2010	2	0	3	TABS	196	4	A	5	0	0	Dark Specks
4/25/2010	2	0	4	TABS	128	4	B	5	0	0	Dark Specks
4/25/2010	2	0	5	TABS	319	5	A	5	0	0	
4/25/2010	2	0	6	TABS	423	5	B	5	0	0	
4/25/2010	2	0	7	TABS	881	1	A	6	0	0	
4/25/2010	2	0	8	TABS	677	1	B	5	0	0	
4/25/2010	2	0	9	TABS	313	3	A	5	0	0	
4/25/2010	2	0	10	TABS	639	3	B	5	0	0	
4/25/2010	2	0	11	TABS	867	6	A	4	0	0	Specks and darker due to ingr added
4/25/2010	2	0	12	TABS	69	6	B	4	0	0	Specks and darker due to ingr added
4/25/2010	2	0	1	CHRISLY	183	2	A	5	0	0	

4/25/2010	2	0	2	CHRISLY	323	2	B	6	0	0	
4/25/2010	2	0	3	CHRISLY	196	4	A	4	0	0	
4/25/2010	2	0	4	CHRISLY	128	4	B	4	0	0	
4/25/2010	2	0	5	CHRISLY	319	5	A	5	0	0	
4/25/2010	2	0	6	CHRISLY	423	5	B	5	0	0	
4/25/2010	2	0	7	CHRISLY	881	1	A	5	0	0	
4/25/2010	2	0	8	CHRISLY	677	1	B	5	0	0	
4/25/2010	2	0	9	CHRISLY	313	3	A	5	0	0	
4/25/2010	2	0	10	CHRISLY	639	3	B	5	0	0	
4/25/2010	2	0	11	CHRISLY	867	6	A	3	0	0	Specks and darker
4/25/2010	2	0	12	CHRISLY	69	6	B	3	0	0	Specks and darker
4/25/2010	2	0	1	SHANNON	183	2	A	5	0	0	
4/25/2010	2	0	2	SHANNON	323	2	B	6	0	0	
4/25/2010	2	0	3	SHANNON	196	4	A	6	0	0	
4/25/2010	2	0	4	SHANNON	128	4	B	6	0	0	
4/25/2010	2	0	5	SHANNON	319	5	A	5	0	0	
4/25/2010	2	0	6	SHANNON	423	5	B	5	0	0	
4/25/2010	2	0	7	SHANNON	881	1	A	5	0	0	
4/25/2010	2	0	8	SHANNON	677	1	B	5	0	0	
4/25/2010	2	0	9	SHANNON	313	3	A	5	0	0	
4/25/2010	2	0	10	SHANNON	639	3	B	6	0	0	
4/25/2010	2	0	11	SHANNON	867	6	A	4	0	0	
4/25/2010	2	0	12	SHANNON	69	6	B	3	0	0	
4/26/2010	2	1	1	SHANNON	445	6	B	5	20	3	Specks
4/26/2010	2	1	2	SHANNON	66	5	B	5	10	2	
4/26/2010	2	1	3	SHANNON	560	2	B	5	0	0	
4/26/2010	2	1	4	SHANNON	244	3	B	6	0	0	
4/26/2010	2	1	5	SHANNON	826	6	A	5	20	4	Specks
4/26/2010	2	1	6	SHANNON	740	5	A	5	10	2	
4/26/2010	2	1	7	SHANNON	514	1	A	5	0	0	
4/26/2010	2	1	8	SHANNON	841	2	A	5	0	0	
4/26/2010	2	1	9	SHANNON	908	4	A	5	10	3	Specks
4/26/2010	2	1	10	SHANNON	928	3	A	6	0	0	

4/26/2010	2	1	11	SHANNON	930	4	B	5	10	2	Specks
4/26/2010	2	1	12	SHANNON	254	1	B	5	10	2	
4/26/2010	2	1	1	TABS	445	6	B	5	20	3	Visible Specks
4/26/2010	2	1	2	TABS	66	5	B	5	0	0	
4/26/2010	2	1	3	TABS	560	2	B	6	0	0	
4/26/2010	2	1	4	TABS	244	3	B	6	0	0	
4/26/2010	2	1	5	TABS	826	6	A	5	30	4	
4/26/2010	2	1	6	TABS	740	5	A	5	0	0	
4/26/2010	2	1	7	TABS	514	1	A	5	0	0	
4/26/2010	2	1	8	TABS	841	2	A	5	0	0	
4/26/2010	2	1	9	TABS	908	4	A	5	0	0	Dark Ingedient Specks
4/26/2010	2	1	10	TABS	928	3	A	5	0	0	
4/26/2010	2	1	11	TABS	930	4	B	5	0	0	Dark Ingedient Specks
4/26/2010	2	1	12	TABS	254	1	B	5	0	0	
4/26/2010	2	1	1	SARAH	445	6	B	1	0	0	
4/26/2010	2	1	2	SARAH	66	5	B	5	0	0	
4/26/2010	2	1	3	SARAH	560	2	B	5	0	0	
4/26/2010	2	1	4	SARAH	244	3	B	6	0	0	
4/26/2010	2	1	5	SARAH	826	6	A	5	40	4	
4/26/2010	2	1	6	SARAH	740	5	A	6	0	0	
4/26/2010	2	1	7	SARAH	514	1	A	6	0	0	
4/26/2010	2	1	8	SARAH	841	2	A	6	0	0	
4/26/2010	2	1	9	SARAH	908	4	A	5	0	0	
4/26/2010	2	1	10	SARAH	928	3	A	7	0	0	
4/26/2010	2	1	11	SARAH	930	4	B	5	0	0	
4/26/2010	2	1	12	SARAH	254	1	B	6	0	0	
5/2/2010	3	0	1	TABS	857	4	A	4	0	0	Black ingredient specks
5/2/2010	3	0	2	TABS	399	4	B	4	0	0	Black ingredient specks
5/2/2010	3	0	3	TABS	878	1	A	4	0	0	
5/2/2010	3	0	4	TABS	583	1	B	5	0	0	
5/2/2010	3	0	5	TABS	889	2	A	4	0	0	
5/2/2010	3	0	6	TABS	779	2	B	4	0	0	
5/2/2010	3	0	7	TABS	435	3	A	4	0	0	

5/2/2010	3	0	8	TABS	192	3	B	4	0	0	
5/2/2010	3	0	9	TABS	412	5	A	4	0	0	Darker areas
5/2/2010	3	0	10	TABS	558	5	B	4	0	0	Darker areas
5/2/2010	3	0	11	TABS	802	6	A	3	0	0	Black Specks
5/2/2010	3	0	12	TABS	917	6	B	3	0	0	Black Specks
5/2/2010	3	0	1	SHANNON	857	4	A	4	0	0	
5/2/2010	3	0	2	SHANNON	399	4	B	4	0	0	
5/2/2010	3	0	3	SHANNON	878	1	A	4	0	0	
5/2/2010	3	0	4	SHANNON	583	1	B	4	0	0	
5/2/2010	3	0	5	SHANNON	889	2	A	4	0	0	
5/2/2010	3	0	6	SHANNON	779	2	B	5	0	0	
5/2/2010	3	0	7	SHANNON	435	3	A	4	0	0	
5/2/2010	3	0	8	SHANNON	192	3	B	5	0	0	
5/2/2010	3	0	9	SHANNON	412	5	A	5	0	0	
5/2/2010	3	0	10	SHANNON	558	5	B	5	0	0	
5/2/2010	3	0	11	SHANNON	802	6	A	3	0	0	
5/2/2010	3	0	12	SHANNON	917	6	B	3	0	0	Large pepper-like specks
5/2/2010	3	0	1	SARAH	857	4	A	5	0	0	Large pepper-like specks
5/2/2010	3	0	2	SARAH	399	4	B	5	0	0	Large pepper-like specks
5/2/2010	3	0	3	SARAH	878	1	A	4	0	0	
5/2/2010	3	0	4	SARAH	583	1	B	5	0	0	
5/2/2010	3	0	5	SARAH	889	2	A	5	0	0	
5/2/2010	3	0	6	SARAH	779	2	B	5	0	0	
5/2/2010	3	0	7	SARAH	435	3	A	4	0	0	
5/2/2010	3	0	8	SARAH	192	3	B	5	0	0	
5/2/2010	3	0	9	SARAH	412	5	A	4	0	0	
5/2/2010	3	0	10	SARAH	558	5	B	4	0	0	darker spots in patty
5/2/2010	3	0	11	SARAH	802	6	A	3	0	0	small pepper-like specks & darker spots
5/2/2010	3	0	12	SARAH	917	6	B	3	0	0	small pepper-like specks & darker spots
5/3/2010	3	1	1	TABS	714	3	A	4	0	0	
5/3/2010	3	1	2	TABS	501	2	B	4	0	0	

5/3/2010	3	1	3	TABS	506	4	A	4	0	0	Black ingredient specks
5/3/2010	3	1	4	TABS	531	6	B	3	20	4	Black ingredient specks
5/3/2010	3	1	5	TABS	955	3	B	6	0	0	
5/3/2010	3	1	6	TABS	742	5	B	5	0	0	
5/3/2010	3	1	7	TABS	611	1	A	5	0	0	
5/3/2010	3	1	8	TABS	601	2	A	5	0	0	
5/3/2010	3	1	9	TABS	418	1	B	4	0	0	
5/3/2010	3	1	10	TABS	285	5	A	5	0	0	
5/3/2010	3	1	11	TABS	272	6	A	3	30	4	Black ingredient specks
5/3/2010	3	1	12	TABS	152	4	B	5	0	0	Black ingredient specks
5/3/2010	3	1	1	SARAH	714	3	A	5	0	0	
5/3/2010	3	1	2	SARAH	501	2	B	3	0	0	
5/3/2010	3	1	3	SARAH	506	4	A	4	10	4	
5/3/2010	3	1	4	SARAH	531	6	B	4	50	4	
5/3/2010	3	1	5	SARAH	955	3	B	5	0	0	some darker spots
5/3/2010	3	1	6	SARAH	742	5	B	5	0	0	
5/3/2010	3	1	7	SARAH	611	1	A	5	0	0	
5/3/2010	3	1	8	SARAH	601	2	A	5	0	0	
5/3/2010	3	1	9	SARAH	418	1	B	5	0	0	
5/3/2010	3	1	10	SARAH	285	5	A	5	10	3	
5/3/2010	3	1	11	SARAH	272	6	A	3	10	3	large clumps of ingredients
5/3/2010	3	1	12	SARAH	152	4	B	3	0	0	pepper-like specks
5/3/2010	3	1	1	SHANNON	714	3	A	4	0	0	
5/3/2010	3	1	2	SHANNON	501	2	B	4	0	0	
5/3/2010	3	1	3	SHANNON	506	4	A	4	0	0	specks
5/3/2010	3	1	4	SHANNON	531	6	B	3	30	3	lots of specks
5/3/2010	3	1	5	SHANNON	955	3	B	5	10	3	
5/3/2010	3	1	6	SHANNON	742	5	B	5	10	3	
5/3/2010	3	1	7	SHANNON	611	1	A	4	0	0	
5/3/2010	3	1	8	SHANNON	601	2	A	5	0	0	
5/3/2010	3	1	9	SHANNON	418	1	B	5	10	2	
5/3/2010	3	1	10	SHANNON	285	5	A	5	10	3	
5/3/2010	3	1	11	SHANNON	272	6	A	3	30	4	dark specks

5/3/2010	3	1	12	SHANNON	152	4	B	5	10	3	specks

COOK DATA

Date	Batch	Order	Trt	Day	Patty	RawWt	CkWt	TempOn	TimeOn	TempOff	TimeOff
4/18/2010	1	1	3	0	A	200.5	151.1	6.7	136	73	149
4/18/2010	1	1	3	0	B	200.3	146.6	6.8	136	73	149
4/18/2010	1	1	3	1	A	200.4	149.5	6.7	136	73	149
4/18/2010	1	1	3	1	B	200	149.4	5.1	136	73	150
4/18/2010	1	1	3	CS	A	199.9	145.1	6.5	136	73	152
4/18/2010	1	1	3	CS	B	200.1	153.3	6.9	136	73	149
4/18/2010	1	1	3	CS	C	199.8	142.1	6.3	136	73	152
4/18/2010	1	1	3	CS	D	200.2	160.4	4.2	136	73	150
4/18/2010	1	1	3	CS	E	200.2	144.6	3.5	136	73	152
4/18/2010	1	1	3	CS	F	199.8	143.1	5.1	136	73	152
4/18/2010	1	2	3	CS	G	200.4	147.6	10.2	155	73	207
4/18/2010	1	2	3	CS	H	200	148.1	10.6	155	73	207
4/18/2010	1	2	3	CS	I	200	156.8	10.7	155	73	205
4/18/2010	1	2	3	CS	J	200.5	149.3	10.3	155	73	207
4/18/2010	1	2	3	CS	K	200.1	142.9	11.6	155	73	209
4/18/2010	1	2	3	CS	L	200.1	149	11.2	155	73	208
4/18/2010	1	2	3	CS	M	199.5	149.6	8.8	155	73	208
4/18/2010	1	2	3	CS	N	199.9	147.7	10.3	155	73	208
4/18/2010	1	2	3	CS	O	200	159.7	10.4	155	73	204
4/18/2010	1	2	3	CS	P	200	154.1	9.6	155	73	208
4/18/2010	1	3	4	0	A	200.4	148.2	10.9	212	73	225
4/18/2010	1	3	4	0	B	200	142.3	9.1	212	73	225
4/18/2010	1	3	4	1	A	200	142.2	12.2	212	73	224
4/18/2010	1	3	4	1	B	200.3	142.7	11.6	212	73	228
4/18/2010	1	3	4	CS	A	200.4	143.2	11.6	212	73	225
4/18/2010	1	3	4	CS	B	200.2	142.9	10.9	212	73	227
4/18/2010	1	3	4	CS	C	199.5	147.5	11	212	73	228
4/18/2010	1	3	4	CS	D	199.9	143.2	11.7	212	73	227
4/18/2010	1	3	4	CS	E	200	150.8	10.8	212	73	225
4/18/2010	1	3	4	CS	F	200.4	146.4	10.8	212	73	227

4/18/2010	1	4	4	CS	G	200.5	124.3	13	.		73	251
4/18/2010	1	4	4	CS	H	200.3	151.9	13.1	.		73	244
4/18/2010	1	4	4	CS	I	200.5	147.5	12.1	.		73	245
4/18/2010	1	4	4	CS	J	200.3	148	11.9	.		73	246
4/18/2010	1	4	4	CS	K	199.8	130.4	16.2	.		73	251
4/18/2010	1	4	4	CS	L	200.2	130.4	11.7	.		73	251
4/18/2010	1	4	4	CS	M	200.5	144.9	12.6	.		73	246
4/18/2010	1	4	4	CS	N	199.9	143	11.6	.		73	250
4/18/2010	1	4	4	CS	O	200.1	154.3	13	.		73	243
4/18/2010	1	4	4	CS	P	199.8	138.2	11.5	.		73	250
4/18/2010	1	5	1	0	A	200.4	146.8	9.4	247		73	301
4/18/2010	1	5	1	0	B	200.5	149.6	8.2	247		73	302
4/18/2010	1	5	1	1	A	199.5	147.4	7.3	247		73	302
4/18/2010	1	5	1	1	B	200.4	147.1	9	247		73	304
4/18/2010	1	5	1	CS	A	200.4	140.7	10.3	247		73	306
4/18/2010	1	5	1	CS	B	200.3	142.7	10.4	247		73.9	305
4/18/2010	1	5	1	CS	C	200.3	150.6	10.6	247		73	301
4/18/2010	1	5	1	CS	D	199.7	137.8	9.2	247		73	309
4/18/2010	1	5	1	CS	E	199.9	148.2	10.7	247		73	306
4/18/2010	1	5	1	CS	F	199.9	133.1	9.8	247		73	309
4/18/2010	1	6	1	CS	G	200	143.5	12.4	305		73	321
4/18/2010	1	6	1	CS	H	200	140.8	11.6	305		73	322
4/18/2010	1	6	1	CS	I	200.3	138.5	11.5	305		73	320
4/18/2010	1	6	1	CS	J	200.2	144	11.7	305		73	325
4/18/2010	1	6	1	CS	K	200	144.2	11.4	305		73	324
4/18/2010	1	6	1	CS	L	200.5	142.8	11.1	305		73	319
4/18/2010	1	6	1	CS	M	200.3	136.8	11.4	305		73	325
4/18/2010	1	6	1	CS	N	200.2	151.1	12	305		73	317
4/18/2010	1	6	1	CS	O	199.8	142.3	10.3	305		73	321
4/18/2010	1	6	1	CS	P	200.3	143.1	11.2	305		73	319
4/18/2010	1	7	6	0	A	200.1	145.3	14.1	326		73.8	340
4/18/2010	1	7	6	0	B	200.5	134.6	13.9	326		73	342
4/18/2010	1	7	6	1	A	200.2	141.9	14.7	326		73	343

4/18/2010	1	7	6	1	B	199.9	143.4	14.6	326	73	341
4/18/2010	1	7	6	CS	A	200.2	137.2	13.6	326	73	342
4/18/2010	1	7	6	CS	B	200.3	138.2	14.4	326	73	342
4/18/2010	1	7	6	CS	C	199.8	146.4	15	326	73	342
4/18/2010	1	7	6	CS	D	200	141.2	13.9	326	73	341
4/18/2010	1	7	6	CS	E	200	138.6	14.4	326	73	343
4/18/2010	1	7	6	CS	F	200.1	148.3	12.9	326	73	342
4/18/2010	1	8	6	CS	G	199.9	145.6	14.5	345	73	400
4/18/2010	1	8	6	CS	H	199.9	148.3	13.6	345	73	359
4/18/2010	1	8	6	CS	I	200.5	141.2	15	345	73	400
4/18/2010	1	8	6	CS	J	199.6	145.6	15.4	345	73	400
4/18/2010	1	8	6	CS	K	200.3	151.9	15.4	345	73	400
4/18/2010	1	8	6	CS	L	199.7	145.5	15.3	345	73	359
4/18/2010	1	8	6	CS	M	200.1	148.3	14.3	345	73	359
4/18/2010	1	8	6	CS	N	200	149.9	14.6	345	73	358
4/18/2010	1	8	6	CS	O	200.1	146.4	14.8	345	73	400
4/18/2010	1	8	6	CS	P	199.7	156.4	15.1	345	73	358
4/18/2010	1	9	2	0	A	200.1	141.1	13.6	402	73	415
4/18/2010	1	9	2	0	B	200.1	137.8	13.5	402	73	420
4/18/2010	1	9	2	1	A	199.8	139.3	13.2	402	73	418
4/18/2010	1	9	2	1	B	199.6	144.8	13.3	402	73	418
4/18/2010	1	9	2	CS	A	200.2	146.3	13.2	402	73	417
4/18/2010	1	9	2	CS	B	200	141.7	12	402	73	420
4/18/2010	1	9	2	CS	C	199.8	136.9	12.5	402	73	418
4/18/2010	1	9	2	CS	D	200.1	144.7	13	402	73	419
4/18/2010	1	9	2	CS	E	200.2	145.9	11.6	402	73	419
4/18/2010	1	9	2	CS	F	200	144.5	12.1	402	73	420
4/18/2010	1	10	2	CS	G	200.3	134.5	14.7	422	73	438
4/18/2010	1	10	2	CS	H	200.1	140	13.5	422	73	438
4/18/2010	1	10	2	CS	I	200.2	138.7	13.7	422	73	438
4/18/2010	1	10	2	CS	J	200	141.1	13.3	422	73	436
4/18/2010	1	10	2	CS	K	199.9	144.5	14	422	73	435
4/18/2010	1	10	2	CS	L	200.4	140.8	13.8	422	73	438

4/18/2010	1	10	2	CS	M	199.7	156.5	14.1	422	73	437
4/18/2010	1	10	2	CS	N	199.8	147	15	422	73	438
4/18/2010	1	10	2	CS	O	200	141.9	14	422	73	435
4/18/2010	1	10	2	CS	P	200.1	146.7	14.7	422	73	434
4/18/2010	1	11	5	0	A	200	142	13.5	439	73	455
4/18/2010	1	11	5	0	B	200.2	138.6	11.8	439	73	454
4/18/2010	1	11	5	1	A	199.9	147.1	12	439	73	453
4/18/2010	1	11	5	1	B	199.7	147.1	13	439	73	455
4/18/2010	1	11	5	CS	A	200.3	149	12.1	439	73	455
4/18/2010	1	11	5	CS	B	199.8	147.1	13.8	439	73	452
4/18/2010	1	11	5	CS	C	199.7	145.6	12.2	439	73	451
4/18/2010	1	11	5	CS	D	200.4	141.7	11.2	439	73	454
4/18/2010	1	11	5	CS	E	200.1	137.7	12.6	439	73	454
4/18/2010	1	11	5	CS	F	199.9	155.8	12.1	439	73	449
4/18/2010	1	12	5	CS	G	200.4	146.8	13.3	457	73	510
4/18/2010	1	12	5	CS	H	199.7	151	13.6	457	73	509
4/18/2010	1	12	5	CS	I	199.9	139.6	14.1	457	73	510
4/18/2010	1	12	5	CS	J	200.2	145.5	13.9	457	73	509
4/18/2010	1	12	5	CS	K	200.4	138.8	14.1	457	73	514
4/18/2010	1	12	5	CS	L	200	144.6	12.1	457	73	515
4/18/2010	1	12	5	CS	M	199.9	140.5	14.4	457	73	514
4/18/2010	1	12	5	CS	N	199.9	150.2	13.5	457	73	511
4/18/2010	1	12	5	CS	O	200.3	145.5	13.1	457	73	511
4/18/2010	1	12	5	CS	P	200	150.1	13.1	457	73	511
4/25/2010	2	1	2	0	A	199.7	137.8	10.6	124	73	137
4/25/2010	2	1	2	0	B	199.5	139.1	11.2	124	73	138
4/25/2010	2	1	2	1	A	199.9	137.3	11	124	73	139
4/25/2010	2	1	2	1	B	200.4	135.5	10.2	124	73	139
4/25/2010	2	1	2	CS	A	199.7	159.2	11.3	124	73	133
4/25/2010	2	1	2	CS	B	200.2	136.9	10.7	124	73	139
4/25/2010	2	1	2	CS	C	200.1	155.6	10.5	124	73	135
4/25/2010	2	1	2	CS	D	199.6	140	10.6	124	73	137
4/25/2010	2	1	2	CS	E	200.1	140.4	9.4	124	73	139

4/25/2010	2	1	2	CS	F	200.4	137.8	9.5	124	73	140
4/25/2010	2	2	2	CS	G	199.9	143.4	11.6	142	73	158
4/25/2010	2	2	2	CS	H	199.6	141.7	11.6	142	73	158
4/25/2010	2	2	2	CS	I	200.3	137.4	11.9	142	73	159
4/25/2010	2	2	2	CS	J	200.4	145.5	11.5	142	73	157
4/25/2010	2	2	2	CS	K	199.7	145.4	9.9	142	73	156
4/25/2010	2	2	2	CS	L	199.9	142.7	10.7	142	73	156
4/25/2010	2	2	2	CS	M	200.2	141.5	9.9	142	73	156
4/25/2010	2	2	2	CS	N	200	137	10.2	142	73	156
4/25/2010	2	2	2	CS	O	200.1	135.9	10.3	142	73	159
4/25/2010	2	2	2	CS	P	199.6	140.4	10.3	142	75	158
4/25/2010	2	3	4	0	A	200.2	138.4	10.3	157	73	215
4/25/2010	2	3	4	0	B	200.5	140.4	9.6	157	73	213
4/25/2010	2	3	4	1	A	200.2	140.8	11.1	157	73	214
4/25/2010	2	3	4	1	B	200.3	139.2	9.8	157	73	212
4/25/2010	2	3	4	CS	A	200.2	133.9	10.5	157	73	213
4/25/2010	2	3	4	CS	B	199.7	144.1	8.7	157	73	214
4/25/2010	2	3	4	CS	C	200.3	141.7	9	157	73	215
4/25/2010	2	3	4	CS	D	200.3	146.3	9.3	157	73	210
4/25/2010	2	3	4	CS	E	200	141.5	7.8	157	73	214
4/25/2010	2	3	4	CS	F	200.3	134.4	8.5	157	73	214
4/25/2010	2	4	4	CS	G	200.3	135.9	12.7	218	73	235
4/25/2010	2	4	4	CS	H	200.5	133.6	13.3	218	73	231
4/25/2010	2	4	4	CS	I	199.5	137.4	12.4	218	73	234
4/25/2010	2	4	4	CS	J	200.4	133.9	12.1	218	73	235
4/25/2010	2	4	4	CS	K	199.8	142	11.6	218	73	232
4/25/2010	2	4	4	CS	L	200.4	145.7	12.2	218	73	231
4/25/2010	2	4	4	CS	M	199.8	128	11.4	218	73	236
4/25/2010	2	4	4	CS	N	200.2	135.3	11.1	218	73	236
4/25/2010	2	4	4	CS	O	200.4	144.1	10.4	218	73	231
4/25/2010	2	4	4	CS	P	199.8	130	10.6	218	73	235
4/25/2010	2	5	5	0	A	200.2	139.9	9	228	73	243
4/25/2010	2	5	5	0	B	200.4	143.2	7.8	228	73	243

4/25/2010	2	5	5	1	A	200.2	137.9	10.2	228	73	242
4/25/2010	2	5	5	1	B	200.3	148.9	10.3	228	73	241
4/25/2010	2	5	5	CS	A	199.9	136.8	10.8	228	73	242
4/25/2010	2	5	5	CS	B	200.3	144.3	9.6	228	73	244
4/25/2010	2	5	5	CS	C	199.5	141.4	9.1	228	73	243
4/25/2010	2	5	5	CS	D	200.2	141.8	9.4	228	73	241
4/25/2010	2	5	5	CS	E	200.3	136.1	8.6	228	73	244
4/25/2010	2	5	5	CS	F	200.3	143.5	8.1	228	73	245
4/25/2010	2	6	5	CS	G	199.7	130	12.5	247	73	303
4/25/2010	2	6	5	CS	H	200.2	132.6	12.1	247	73	304
4/25/2010	2	6	5	CS	I	199.9	141.2	12.1	247	73	301
4/25/2010	2	6	5	CS	J	200.3	143.5	11	247	73	300
4/25/2010	2	6	5	CS	K	200.2	144	11.9	247	73	302
4/25/2010	2	6	5	CS	L	200.4	145.8	12	247	73	301
4/25/2010	2	6	5	CS	M	200	145.9	10.9	247	73	301
4/25/2010	2	6	5	CS	N	200	138.4	10.6	247	73	304
4/25/2010	2	6	5	CS	O	200	134.2	10.9	247	73	304
4/25/2010	2	6	5	CS	P	199.7	140.9	10.4	247	73	302
4/25/2010	2	7	1	0	A	200.2	141.7	10.1	258	73	314
4/25/2010	2	7	1	0	B	200.1	146.8	9.2	258	73	313
4/25/2010	2	7	1	1	A	199.8	140.1	11.1	258	73	314
4/25/2010	2	7	1	1	B	200.4	147.6	10.3	258	73	315
4/25/2010	2	7	1	CS	A	200.2	139.6	10.6	258	73	313
4/25/2010	2	7	1	CS	B	199.8	143.5	13	258	73	315
4/25/2010	2	7	1	CS	C	199.8	143.5	10.2	258	73	311
4/25/2010	2	7	1	CS	D	199.5	139.4	11.6	258	73	312
4/25/2010	2	7	1	CS	E	199.6	141.1	10.4	258	73	313
4/25/2010	2	7	1	CS	F	200.2	146.4	10.9	258	73	314
4/25/2010	2	8	1	CS	G	199.9	130.7	14.4	321	73	337
4/25/2010	2	8	1	CS	H	199.7	133.6	13.8	321	73	336
4/25/2010	2	8	1	CS	I	199.7	127.4	13.2	321	73	337
4/25/2010	2	8	1	CS	J	199.8	142.3	12.1	321	73	334
4/25/2010	2	8	1	CS	K	199.8	138.3	14.5	321	73	334

4/25/2010	2	8	1	CS	L	200	123.9	13.5	321	73	337
4/25/2010	2	8	1	CS	M	199.7	134.7	11.3	321	73	338
4/25/2010	2	8	1	CS	N	199.7	136	10.8	321	73	338
4/25/2010	2	8	1	CS	O	199.8	143	12.6	321	73	336
4/25/2010	2	8	1	CS	P	199.6	140.7	12.9	321	73	336
4/25/2010	2	9	3	0	A	199.7	127.9	9	331	73	350
4/25/2010	2	9	3	0	B	199.9	136.6	9.6	331	74	348
4/25/2010	2	9	3	1	A	200.4	140.7	12.1	331	73.6	347
4/25/2010	2	9	3	1	B	199.7	137	9.8	331	73	349
4/25/2010	2	9	3	CS	A	200.4	135	9.3	331	73.6	351
4/25/2010	2	9	3	CS	B	199.9	134.5	10.8	331	73.5	346
4/25/2010	2	9	3	CS	C	199.7	127.2	8.8	331	73	350
4/25/2010	2	9	3	CS	D	200	131.8	8.8	331	73.8	355
4/25/2010	2	9	3	CS	E	200	137.6	9.5	331	75	348
4/25/2010	2	9	3	CS	F	200.2	140.5	8.5	331	74.4	347
4/25/2010	2	10	3	CS	G	199.6	141.9	12.2	346	73	401
4/25/2010	2	10	3	CS	H	200.4	142	12.4	346	73	402
4/25/2010	2	10	3	CS	I	200.1	145.2	9.9	346	73	357
4/25/2010	2	10	3	CS	J	200	148.7	12	346	73	359
4/25/2010	2	10	3	CS	K	200.4	144	11.5	346	73	359
4/25/2010	2	10	3	CS	L	199.8	138	11.6	346	73	402
4/25/2010	2	10	3	CS	M	199.7	149.2	11.7	346	73	400
4/25/2010	2	10	3	CS	N	199.5	136	11	346	73	401
4/25/2010	2	10	3	CS	O	199.5	134.5	10.4	346	73	401
4/25/2010	2	10	3	CS	P	200	138.5	10.5	346	73	402
4/25/2010	2	11	6	0	A	199.6	141.4	7.8	358	73	415
4/25/2010	2	11	6	0	B	200.3	143.8	11.1	358	73	412
4/25/2010	2	11	6	1	A	200.2	145.6	11.5	358	73	414
4/25/2010	2	11	6	1	B	200.4	139.4	9.1	358	73	415
4/25/2010	2	11	6	CS	A	200.2	136.6	12.2	358	73	413
4/25/2010	2	11	6	CS	B	200.2	145.7	11.5	358	73	412
4/25/2010	2	11	6	CS	C	199.8	141.5	8.5	358	73	413
4/25/2010	2	11	6	CS	D	199.5	159.1	8.1	358	73	411

4/25/2010	2	11	6	CS	E	200.4	146.1	11.1	358	74	413
4/25/2010	2	11	6	CS	F	199.7	143.5	11	358	73	412
4/25/2010	2	12	6	CS	G	200.2	135.7	13.6	408	74	424
4/25/2010	2	12	6	CS	H	200.1	145.3	12.3	408	73	420
4/25/2010	2	12	6	CS	I	200.4	144.1	12.8	408	73	424
4/25/2010	2	12	6	CS	J	200.2	142.7	12.6	408	73	420
4/25/2010	2	12	6	CS	K	200.2	133.6	11.8	408	74	424
4/25/2010	2	12	6	CS	L	199.7	141.6	12.5	408	73	423
4/25/2010	2	12	6	CS	M	199.5	146.1	10.7	408	73	421
4/25/2010	2	12	6	CS	N	199.8	141.3	11.9	408	73	422
4/25/2010	2	12	6	CS	O	199.6	137.5	10.9	408	73	424
4/25/2010	2	12	6	CS	P	200.2	142.5	10.8	408	73	422
5/2/2010	3	1	4	0	A	200.3	149.1	7.4	118	73	134
5/2/2010	3	1	4	0	B	199.5	152.9	7.7	118	73	130
5/2/2010	3	1	4	1	A	200.5	145.1	7	118	73	135
5/2/2010	3	1	4	1	B	199.5	152.5	6.3	118	73	132
5/2/2010	3	1	4	CS	A	199.7	143.9	6.4	118	73	135
5/2/2010	3	1	4	CS	B	199.5	150.8	6	118	73	133
5/2/2010	3	1	4	CS	C	199.9	140.3	7	118	73	134
5/2/2010	3	1	4	CS	D	199.7	148.8	4.8	118	73	133
5/2/2010	3	1	4	CS	E	200.5	153.9	4.9	118	73	133
5/2/2010	3	1	4	CS	F	199.8	158.8	4.9	118	73	130
5/2/2010	3	2	4	CS	G	199.8	150.8	7.6	127	74	143
5/2/2010	3	2	4	CS	H	200.5	159.1	7	127	73	141
5/2/2010	3	2	4	CS	I	200.1	157.7	7.4	127	73	141
5/2/2010	3	2	4	CS	J	200.5	158.7	7	127	73	140
5/2/2010	3	2	4	CS	K	200.4	157.4	8.6	127	73	140
5/2/2010	3	2	4	CS	L	199.9	153.8	5.7	127	73	143
5/2/2010	3	2	4	CS	M	199.9	149.2	7.2	127	73	144
5/2/2010	3	2	4	CS	N	200.5	159.4	6	127	73	141
5/2/2010	3	2	4	CS	O	200.4	151.9	6.9	127	73	144
5/2/2010	3	2	4	CS	P	199.5	157.1	6.1	127	73	143
5/2/2010	3	3	1	0	A	200.5	148.2	8.6	147	75	200

5/2/2010	3	3	1	0	B	199.8	145.2	9.2	147	73	202
5/2/2010	3	3	1	1	A	199.7	153	8.5	147	73	200
5/2/2010	3	3	1	1	B	200.3	150.2	9.3	147	73	159
5/2/2010	3	3	1	CS	A	200.2	150.1	8.9	147	73	200
5/2/2010	3	3	1	CS	B	199.7	147	8.6	147	73	203
5/2/2010	3	3	1	CS	C	199.7	145.7	8.6	147	74	202
5/2/2010	3	3	1	CS	D	200.3	148	9	147	73	201
5/2/2010	3	3	1	CS	E	200.3	152	8.2	147	73	159
5/2/2010	3	3	1	CS	F	200.4	137.7	8	147	73	203
5/2/2010	3	4	1	CS	G	200.5	144.8	9.6	156	73	214
5/2/2010	3	4	1	CS	H	199.6	146.7	9	156	73	214
5/2/2010	3	4	1	CS	I	200.2	139.3	9.6	156	74	217
5/2/2010	3	4	1	CS	J	199.6	142.5	9.8	156	73	212
5/2/2010	3	4	1	CS	K	200.3	150.7	8.6	156	74	213
5/2/2010	3	4	1	CS	L	200.1	147.7	7.2	156	73	213
5/2/2010	3	4	1	CS	M	199.7	142.5	8.8	156	73	215
5/2/2010	3	4	1	CS	N	199.9	150.5	8.3	156	73	211
5/2/2010	3	4	1	CS	O	199.7	166	8.7	156	73	207
5/2/2010	3	4	1	CS	P	200	144.4	9.5	156	74.5	217
5/2/2010	3	5	2	0	A	200.2	142.1	9.4	210	73	225
5/2/2010	3	5	2	0	B	200.1	149.3	8	210	73	225
5/2/2010	3	5	2	1	A	199.8	143.7	8.9	210	73	224
5/2/2010	3	5	2	1	B	200.4	151	9.2	210	73	223
5/2/2010	3	5	2	CS	A	200	148	7.5	210	73	225
5/2/2010	3	5	2	CS	B	200.3	159.2	7.4	210	73	222
5/2/2010	3	5	2	CS	C	199.7	152.2	7.7	210	73	224
5/2/2010	3	5	2	CS	D	199.9	153.6	6.8	210	73	226
5/2/2010	3	5	2	CS	E	200	157	7.8	210	73	222
5/2/2010	3	5	2	CS	F	200.3	141.8	8.2	210	73	225
5/2/2010	3	6	2	CS	G	200.5	145.6	6.9	222	73	242
5/2/2010	3	6	2	CS	H	199.5	154.3	10	222	73	236
5/2/2010	3	6	2	CS	I	200.5	154.4	9.8	222	73	235
5/2/2010	3	6	2	CS	J	199.9	144.3	9.3	222	73	240

5/2/2010	3	6	2	CS	K	200.5	137.9	9.3	222	73	242
5/2/2010	3	6	2	CS	L	200.1	147	10.5	222	73	239
5/2/2010	3	6	2	CS	M	200.3	145.6	9	222	73	238
5/2/2010	3	6	2	CS	N	199.7	164.2	10.4	222	73	232
5/2/2010	3	6	2	CS	O	200.1	168.3	7.8	222	73	234
5/2/2010	3	6	2	CS	P	200.3	144.9	9.3	222	73	242
5/2/2010	3	7	3	0	A	199.6	156.2	10.2	234	73	246
5/2/2010	3	7	3	0	B	199.5	149.1	10.6	234	73	247
5/2/2010	3	7	3	1	A	199.9	149.2	8.8	234	73	251
5/2/2010	3	7	3	1	B	200.4	142.7	9.4	234	73	251
5/2/2010	3	7	3	CS	A	199.7	138.5	9.5	234	73	251
5/2/2010	3	7	3	CS	B	199.9	141.3	9.2	234	73	247
5/2/2010	3	7	3	CS	C	200.5	137	9.5	234	73	252
5/2/2010	3	7	3	CS	D	200.4	138.3	8.4	234	73	250
5/2/2010	3	7	3	CS	E	199.5	152.5	9.1	234	73	250
5/2/2010	3	7	3	CS	F	199.9	148.6	8.7	234	74.2	249
5/2/2010	3	8	3	CS	G	200.3	154.5	12	249	73	301
5/2/2010	3	8	3	CS	H	200.2	149.6	11.3	249	75	305
5/2/2010	3	8	3	CS	I	200.4	148.5	11.3	249	73	304
5/2/2010	3	8	3	CS	J	199.6	161	12.6	249	73	300
5/2/2010	3	8	3	CS	K	200.1	148.1	10.8	249	73	306
5/2/2010	3	8	3	CS	L	199.7	149.1	12	249	73	306
5/2/2010	3	8	3	CS	M	199.5	155.6	12.5	249	73	302
5/2/2010	3	8	3	CS	N	200.4	148.5	11.8	249	74	305
5/2/2010	3	8	3	CS	O	199.6	145.2	11.2	249	73	303
5/2/2010	3	8	3	CS	P	200.1	149.1	11.4	249	73	305
5/2/2010	3	9	5	0	A	199.6	141.8	9.9	259	73	316
5/2/2010	3	9	5	0	B	199.9	144.5	8.4	259	73	314
5/2/2010	3	9	5	1	A	199.7	151.3	7.4	259	73	314
5/2/2010	3	9	5	1	B	200.4	159.4	6.8	259	73	311
5/2/2010	3	9	5	CS	A	200.1	158.9	6.4	259	73	309
5/2/2010	3	9	5	CS	B	200.3	142.3	7.2	259	73	315
5/2/2010	3	9	5	CS	C	199.9	158.7	6.8	259	73	311

5/2/2010	3	9	5	CS	D	199.9	144.9	5.6	259	73	314
5/2/2010	3	9	5	CS	E	200.4	148.7	6.9	259	73	316
5/2/2010	3	9	5	CS	F	199.6	150.5	5	259	73	312
5/2/2010	3	10	5	CS	G	199.9	149.2	12.1	312	73	326
5/2/2010	3	10	5	CS	H	200.2	140.5	12.4	312	73	331
5/2/2010	3	10	5	CS	I	199.6	153.3	11.9	312	73	325
5/2/2010	3	10	5	CS	J	199.8	150.4	10	312	73	329
5/2/2010	3	10	5	CS	K	200.1	149.5	8	312	73	327
5/2/2010	3	10	5	CS	L	199.8	161.7	8.5	312	73	325
5/2/2010	3	10	5	CS	M	200.5	153.3	11.1	312	73	325
5/2/2010	3	10	5	CS	N	200	147.7	10.8	312	73	328
5/2/2010	3	10	5	CS	O	200	142.9	13.2	312	74	330
5/2/2010	3	10	5	CS	P	199.6	157.1	10.9	312	75	324
5/2/2010	3	11	6	0	A	200.3	144.3	9.3	324	73	339
5/2/2010	3	11	6	0	B	200.2	152.3	8.3	324	73	337
5/2/2010	3	11	6	1	A	199.9	144.7	8.9	324	73	338
5/2/2010	3	11	6	1	B	199.5	160.5	9.3	324	73	335
5/2/2010	3	11	6	CS	A	199.5	144.3	8.3	324	73	339
5/2/2010	3	11	6	CS	B	199.9	156.8	7.8	324	73	340
5/2/2010	3	11	6	CS	C	199.5	161.9	8.6	324	73	335
5/2/2010	3	11	6	CS	D	200.3	150.8	6.9	324	73	339
5/2/2010	3	11	6	CS	E	200.5	145.2	6	324	73	340
5/2/2010	3	11	6	CS	F	199.6	165.8	6.6	324	73	333
5/2/2010	3	12	6	CS	G	199.8	152.7	11.4	336	73	351
5/2/2010	3	12	6	CS	H	200.4	153.2	12.1	336	73	349
5/2/2010	3	12	6	CS	I	200.3	144.9	11.2	336	73.5	356
5/2/2010	3	12	6	CS	J	199.5	149	11	336	74	354
5/2/2010	3	12	6	CS	K	200	149.2	8.6	336	73	353
5/2/2010	3	12	6	CS	L	199.8	158.6	11.8	336	73	350
5/2/2010	3	12	6	CS	M	200.2	145.9	9.7	336	73.8	355
5/2/2010	3	12	6	CS	N	200	147.1	8	336	73	352
5/2/2010	3	12	6	CS	O	200.2	149.7	8.5	336	73	351
5/2/2010	3	12	6	CS	P	200.4	156.4	11.4	336	73	349

CONSUMER DATA CODES

Item	Abbreviation	Category	Code
Gender	G	Female	F
		Male	M
Age	Yr	<20 years	A
		20-29 years	B
		30-39 years	C
		40-49 years	D
		50-59 years	E
		>60 years	F
Total Household Income per year	Inc	<$20,000	A
		$20,000-$29,999	B
		$30,000-$39,999	C
		$40,000-$49,999	D
		$50,000-$59,999	E
		>$60,000	F
Household Occupancy	House	1 person	1
		2 people	2
		3 people	3
		4 people	4
		5 people	5
		6 or more people	6
Ethnic Background	Eth	White/Caucasian	W
		Black/African-American	B
		Hispanic/Latino	H
		American Indian	AI
		Asian or Pacific Islander	AP
Employment Status	Wk	Not Employed	A
		Part-Time	B
		Full-Time	C
		Student	D

B=Batch
P=Panelist

O=Overall like
F=Flavor Like
FI=Flavor Intensity
T=Tenderness
TL=Tenderness Level
GB=Ground beef-like bite
J=Juiciness

CONSUMER DATA

Date	B	P	Yr	Inc	House	Wk	G	Eth	Ord	Trt	Code	O	F	FI	T	TL	GB	J
4/19/2010	1	1	B	A	1	D	F	W	1	Ch	139	8	8	7	5	3	8	4
4/19/2010	1	1	B	A	1	D	F	W	2	RM	960	2	1	7	6	5	4	6
4/19/2010	1	1	B	A	1	D	F	W	3	C	501	4	7	5	4	4	5	1
4/19/2010	1	1	B	A	1	D	F	W	4	BTS	977	8	8	6	7	8	9	8
4/19/2010	1	1	B	A	1	D	F	W	5	BB	384	6	4	2	6	6	7	5
4/19/2010	1	1	B	A	1	D	F	W	6	CG	477	8	7	6	7	6	7	6
4/19/2010	1	2	B	A	2	D	F	W	1	Ch	139	9	9	9	9	8	9	9
4/19/2010	1	2	B	A	2	D	F	W	2	RM	960	3	2	7	4	5	7	5
4/19/2010	1	2	B	A	2	D	F	W	3	C	501	5	5	5	5	6	5	5
4/19/2010	1	2	B	A	2	D	F	W	4	BTS	977	4	3	1	7	6	4	8
4/19/2010	1	2	B	A	2	D	F	W	5	BB	384	6	6	3	6	7	9	6
4/19/2010	1	2	B	A	2	D	F	W	6	CG	477	3	1	9	3	3	1	3
4/19/2010	1	3	B	.	5	A	M	H	1	Ch	139	5	4	3	7	7	7	5
4/19/2010	1	3	B	.	5	A	M	H	2	RM	960	5	5	4	6	6	6	6
4/19/2010	1	3	B	.	5	A	M	H	3	C	501	7	7	7	7	7	7	6
4/19/2010	1	3	B	.	5	A	M	H	4	BTS	977	5	5	4	5	5	7	7
4/19/2010	1	3	B	.	5	A	M	H	5	BB	384	7	7	7	7	7	7	6
4/19/2010	1	3	B	.	5	A	M	H	6	CG	477	6	6	6	5	4	7	4
4/19/2010	1	4	B	A	1	D	M	W	1	Ch	139	5	4	3	7	7	6	7
4/19/2010	1	4	B	A	1	D	M	W	2	RM	960	6	5	6	5	7	4	7
4/19/2010	1	4	B	A	1	D	M	W	3	C	501	5	4	4	6	4	4	5
4/19/2010	1	4	B	A	1	D	M	W	4	BTS	977	6	6	6	6	6	5	7
4/19/2010	1	4	B	A	1	D	M	W	5	BB	384	5	6	4	6	6	4	6
4/19/2010	1	4	B	A	1	D	M	W	6	CG	477	6	5	5	7	6	3	8
4/19/2010	1	5	B	A	1	D	M	B	1	Ch	139	6	6	5	7	6	9	6
4/19/2010	1	5	B	A	1	D	M	B	2	RM	960	7	6	5	8	8	8	8
4/19/2010	1	5	B	A	1	D	M	B	3	C	501	5	5	3	7	8	7	6
4/19/2010	1	5	B	A	1	D	M	B	4	BTS	977	5	5	4	9	8	9	9
4/19/2010	1	5	B	A	1	D	M	B	5	BB	384	6	6	5	7	6	8	6
4/19/2010	1	5	B	A	1	D	M	B	6	CG	477	5	3	2	4	9	4	6

4/19/2010	1	6	A	A	4	D	F	W	1	Ch	139	6	6	5	3	4	8	5
4/19/2010	1	6	A	A	4	D	F	W	2	RM	960	4	2	4	7	8	6	4
4/19/2010	1	6	A	A	4	D	F	W	3	C	501	4	5	3	4	4	5	3
4/19/2010	1	6	A	A	4	D	F	W	4	BTS	977	7	7	6	7	7	6	8
4/19/2010	1	6	A	A	4	D	F	W	5	BB	384	7	8	3	7	9	8	9
4/19/2010	1	6	A	A	4	D	F	W	6	CG	477	8	8	6	7	8	8	8
5/3/2010	3	7	B	A	2	D	F	B	1	CG	470	4	6	5	5	4	5	4
5/3/2010	3	7	B	A	2	D	F	B	2	RM	157	6	6	5	6	6	6	6
5/3/2010	3	7	B	A	2	D	F	B	3	C	837	8	7	6	7	7	7	7
5/3/2010	3	7	B	A	2	D	F	B	4	Ch	640	9	8	7	7	7	8	8
5/3/2010	3	7	B	A	2	D	F	B	5	BB	351	3	4	3	6	6	7	5
5/3/2010	3	7	B	A	2	D	F	B	6	BTS	850	9	8	8	8	7	7	7
4/19/2010	1	8	B	A	3	D	F	H	1	BTS	977	4	4	3	6	5	5	6
4/19/2010	1	8	B	A	3	D	F	H	2	C	501	3	3	3	4	5	5	4
4/19/2010	1	8	B	A	3	D	F	H	3	Ch	139	5	5	5	6	6	6	6
4/19/2010	1	8	B	A	3	D	F	H	4	BB	384	4	4	4	5	5	5	4
4/19/2010	1	8	B	A	3	D	F	H	5	RM	960	4	4	5	6	6	6	4
4/19/2010	1	8	B	A	3	D	F	H	6	CG	477	6	6	5	4	4	4	5
4/19/2010	1	9	B	A	1	D	F	W	1	BTS	977	5	2	2	7	7	5	8
4/19/2010	1	9	B	A	1	D	F	W	2	C	501	6	4	4	4	3	4	3
4/19/2010	1	9	B	A	1	D	F	W	3	Ch	139	7	6	4	4	4	7	3
4/19/2010	1	9	B	A	1	D	F	W	4	BB	384	7	6	6	8	8	8	8
4/19/2010	1	9	B	A	1	D	F	W	5	RM	960	2	2	6	6	8	7	.
4/19/2010	1	9	B	A	1	D	F	W	6	CG	477	2	5	4	2	2	5	1
4/19/2010	1	10	B	A	2	D	F	H	1	BTS	977	8	8	8	8	8	8	7
4/19/2010	1	10	B	A	2	D	F	H	2	C	501	5	4	4	8	8	8	8
4/19/2010	1	10	B	A	2	D	F	H	3	Ch	139	7	7	6	8	8	8	5
4/19/2010	1	10	B	A	2	D	F	H	4	BB	384	6	5	4	8	8	8	5
4/19/2010	1	10	B	A	2	D	F	H	5	RM	960	5	6	5	7	7	8	5
4/19/2010	1	10	B	A	2	D	F	H	6	CG	477	8	8	8	8	8	8	8
4/19/2010	1	11	B	A	4	D	F	W	1	Ch	139	7	7	6	7	5	6	5
4/19/2010	1	11	B	A	4	D	F	W	2	BB	384	9	9	8	7	6	9	9
4/19/2010	1	11	B	A	4	D	F	W	3	BTS	977	5	4	5	4	4	4	9

4/19/2010	1	11	B	A	4	D	F	W	4	RM	960	2	2	5	3	9	1	9
4/19/2010	1	11	B	A	4	D	F	W	5	CG	477	4	8	7	3	3	6	4
4/19/2010	1	11	B	A	4	D	F	W	6	C	501	5	8	7	5	6	7	6
4/19/2010	1	12	B	A	1	D	F	W	1	Ch	139	6	4	4	5	8	5	6
4/19/2010	1	12	B	A	1	D	F	W	2	BB	384	5	3	2	6	7	6	5
4/19/2010	1	12	B	A	1	D	F	W	3	BTS	977	2	3	3	2	9	3	7
4/19/2010	1	12	B	A	1	D	F	W	4	RM	960	3	3	3	3	7	4	7
4/19/2010	1	12	B	A	1	D	F	W	5	CG	477	8	6	6	8	5	4	6
4/19/2010	1	12	B	A	1	D	F	W	6	C	501	6	5	5	5	4	6	4
4/19/2010	1	13	B	F	2	C	M	W	1	Ch	139	9	9	9	9	9	9	9
4/19/2010	1	13	B	F	2	C	M	W	2	BB	384	9	9	9	8	8	9	8
4/19/2010	1	13	B	F	2	C	M	W	3	BTS	977	9	9	8	8	8	9	8
4/19/2010	1	13	B	F	2	C	M	W	4	RM	960	9	9	9	9	9	8	9
4/19/2010	1	13	B	F	2	C	M	W	5	CG	477	8	8	8	8	7	8	8
4/19/2010	1	13	B	F	2	C	M	W	6	C	501	8	8	8	8	8	9	8
4/19/2010	1	14	A	A	3	D	F	B	1	BTS	977	8	5	5	7	7	7	8
4/19/2010	1	14	A	A	3	D	F	B	2	C	501	2	2	4	6	6	4	2
4/19/2010	1	14	A	A	3	D	F	B	3	Ch	139	7	7	6	7	7	7	7
4/19/2010	1	14	A	A	3	D	F	B	4	BB	384	3	3	3	7	8	3	8
4/19/2010	1	14	A	A	3	D	F	B	5	RM	960	5	5	3	4	5	6	3
4/19/2010	1	14	A	A	3	D	F	B	6	CG	477	6	5	3	4	5	6	5
4/19/2010	1	15	B	A	4	D	M	W	1	BTS	977	5	3	4	6	6	6	3
4/19/2010	1	15	B	A	4	D	M	W	2	C	501	6	6	5	6	7	7	6
4/19/2010	1	15	B	A	4	D	M	W	3	Ch	139	4	3	6	5	6	4	3
4/19/2010	1	15	B	A	4	D	M	W	4	BB	384	3	4	2	6	6	3	7
4/19/2010	1	15	B	A	4	D	M	W	5	RM	960	6	4	6	6	6	4	7
4/19/2010	1	15	B	A	4	D	M	W	6	CG	477	3	4	3	6	7	6	8
4/19/2010	1	16	B	A	2	C	F	B	1	BTS	977	6	3	1	9	9	7	7
4/19/2010	1	16	B	A	2	C	F	B	2	C	501	5	3	1	7	7	5	5
4/19/2010	1	16	B	A	2	C	F	B	3	Ch	139	7	4	3	4	4	4	4
4/19/2010	1	16	B	A	2	C	F	B	4	BB	384	8	9	7	9	8	8	8
4/19/2010	1	16	B	A	2	C	F	B	5	RM	960	6	2	3	9	9	8	9
4/19/2010	1	16	B	A	2	C	F	B	6	CG	477	6	8	3	6	3	4	7

4/19/2010	1	17	B	A	2	D	F	AP	1	Ch	139	5	7	7	8	7	9	8
4/19/2010	1	17	B	A	2	D	F	AP	2	BB	384	5	5	7	7	5	6	5
4/19/2010	1	17	B	A	2	D	F	AP	3	BTS	977	4	4	7	7	5	7	3
4/19/2010	1	17	B	A	2	D	F	AP	4	RM	960	3	3	6	7	5	7	4
4/19/2010	1	17	B	A	2	D	F	AP	5	CG	477	2	2	7	5	7	4	3
4/19/2010	1	17	B	A	2	D	F	AP	6	C	501	6	8	8	7	6	7	7
4/19/2010	1	18	B	B	1	C	M	H	1	BTS	977	.	4	2	5	6	5	7
4/19/2010	1	18	B	B	1	C	M	H	2	C	501	7	7	7	5	4	4	5
4/19/2010	1	18	B	B	1	C	M	H	3	Ch	139	6	5	5	3	2	3	3
4/19/2010	1	18	B	B	1	C	M	H	4	BB	384	4	4	2	7	8	7	7
4/19/2010	1	18	B	B	1	C	M	H	5	RM	960	5	5	6	5	6	5	4
4/19/2010	1	18	B	B	1	C	M	H	6	CG	477	7	6	6	7	7	5	6
4/19/2010	1	19	A	A	5	B	M	W	1	BTS	977	7	4	3	8	7	5	7
4/19/2010	1	19	A	A	5	B	M	W	2	C	501	4	4	3	7	7	7	7
4/19/2010	1	19	A	A	5	B	M	W	3	Ch	139	8	6	6	7	7	6	7
4/19/2010	1	19	A	A	5	B	M	W	4	BB	384	6	5	5	6	6	8	6
4/19/2010	1	19	A	A	5	B	M	W	5	RM	960	7	6	6	6	6	6	5
4/19/2010	1	19	A	A	5	B	M	W	6	CG	477	8	7	7	6	6	7	7
4/19/2010	1	20	B	A	2	B	F	W	1	BTS	977	8	7	5	6	7	8	9
4/19/2010	1	20	B	A	2	B	F	W	2	C	501	5	6	5	5	4	4	5
4/19/2010	1	20	B	A	2	B	F	W	3	Ch	139	4	4	3	7	7	8	5
4/19/2010	1	20	B	A	2	B	F	W	4	BB	384	8	8	6	5	5	8	5
4/19/2010	1	20	B	A	2	B	F	W	5	RM	960	5	4	3	6	7	6	5
4/19/2010	1	20	B	A	2	B	F	W	6	CG	477	5	3	3	6	7	5	5
4/19/2010	1	21	B	A	4	D	M	W	1	CG	477	7	7	5	7	5	6	8
4/19/2010	1	21	B	A	4	D	M	W	2	C	501	5	5	4	6	4	4	4
4/19/2010	1	21	B	A	4	D	M	W	3	Ch	139	8	8	8	7	7	8	7
4/19/2010	1	21	B	A	4	D	M	W	4	BTS	977	7	6	7	6	5	6	6
4/19/2010	1	21	B	A	4	D	M	W	5	BB	384	6	6	4	5	6	5	5
4/19/2010	1	21	B	A	4	D	M	W	6	RM	960	6	6	6	6	6	6	5
4/19/2010	1	22	A	A	4	D	M	H	1	CG	477	5	3	2	8	7	6	7
4/19/2010	1	22	A	A	4	D	M	H	2	C	501	5	5	6	6	6	5	5
4/19/2010	1	22	A	A	4	D	M	H	3	Ch	139	6	4	4	5	6	5	5

4/19/2010	1	22	A	A	4	D	M	H	4	BTS	977	7	5	4	6	7	6	8
4/19/2010	1	22	A	A	4	D	M	H	5	BB	384	5	6	6	7	7	4	5
4/19/2010	1	22	A	A	4	D	M	H	6	RM	960	8	7	7	7	6	5	6
4/19/2010	1	23	B	A	2	D	F	W	1	CG	477	8	8	8	5	5	9	7
4/19/2010	1	23	B	A	2	D	F	W	2	C	501	4	4	3	8	8	9	5
4/19/2010	1	23	B	A	2	D	F	W	3	Ch	139	6	4	3	9	9	9	5
4/19/2010	1	23	B	A	2	D	F	W	4	BTS	977	7	7	6	4	4	8	6
4/19/2010	1	23	B	A	2	D	F	W	5	BB	384	8	7	7	5	4	9	8
4/19/2010	1	23	B	A	2	D	F	W	6	RM	960	6	4	7	6	5	9	4
4/26/2010	2	24	B	A	5	D	F	W	1	BB	413	7	7	7	8	7	8	8
4/26/2010	2	24	B	A	5	D	F	W	2	Ch	867	6	6	5	6	5	6	5
4/26/2010	2	24	B	A	5	D	F	W	3	C	646	6	6	6	6	5	6	5
4/26/2010	2	24	B	A	5	D	F	W	4	RM	335	7	8	7	7	7	7	6
4/26/2010	2	24	B	A	5	D	F	W	5	BTS	276	8	8	7	8	8	7	8
4/26/2010	2	24	B	A	5	D	F	W	6	CG	530	6	6	6	6	5	7	5
4/26/2010	2	25	A	A	4	D	F	W	1	BB	413	7	8	9	9	8	3	8
4/26/2010	2	25	A	A	4	D	F	W	2	Ch	867	6	7	6	4	5	5	5
4/26/2010	2	25	A	A	4	D	F	W	3	C	646	9	9	7	9	7	5	8
4/26/2010	2	25	A	A	4	D	F	W	4	RM	335	7	7	7	4	4	5	5
4/26/2010	2	25	A	A	4	D	F	W	5	BTS	276	6	6	5	5	4	5	5
4/26/2010	2	25	A	A	4	D	F	W	6	CG	530	2	2	8	5	5	5	4
4/26/2010	2	26	A	A	1	A	M	W	1	CG	530	7	8	5	9	6	9	8
4/26/2010	2	26	A	A	1	A	M	W	2	C	646	6	5	3	7	6	7	4
4/26/2010	2	26	A	A	1	A	M	W	3	Ch	867	7	7	6	8	7	7	6
4/26/2010	2	26	A	A	1	A	M	W	4	BTS	276	6	4	6	5	6	6	5
4/26/2010	2	26	A	A	1	A	M	W	5	BB	413	9	9	7	8	8	8	5
4/26/2010	2	26	A	A	1	A	M	W	6	RM	335	7	7	6	8	9	9	9
4/26/2010	2	27	B	A	2	D	F	H	1	Ch	867	6	7	4	7	7	7	3
4/26/2010	2	27	B	A	2	D	F	H	2	RM	335	3	3	3	6	7	3	1
4/26/2010	2	27	B	A	2	D	F	H	3	C	646	5	6	6	7	7	7	4
4/26/2010	2	27	B	A	2	D	F	H	4	BTS	276	8	8	6	8	7	7	5
4/26/2010	2	27	B	A	2	D	F	H	5	BB	413	5	6	4	7	7	7	4
4/26/2010	2	27	B	A	2	D	F	H	6	CG	530	7	6	4	6	7	7	4

4/26/2010	2	28	B	A	2	B	M	H	1	Ch	867	5	4	4	5	5	5	5
4/26/2010	2	28	B	A	2	B	M	H	2	RM	335	7	7	7	7	7	7	6
4/26/2010	2	28	B	A	2	B	M	H	3	C	646	7	7	6	7	7	7	6
4/26/2010	2	28	B	A	2	B	M	H	4	BTS	276	5	6	6	6	6	7	8
4/26/2010	2	28	B	A	2	B	M	H	5	BB	413	8	7	8	7	7	8	8
4/26/2010	2	28	B	A	2	B	M	H	6	CG	530	4	4	4	6	6	7	6
4/26/2010	2	29	A	A	2	D	F	B	1	Ch	867	6	6	3	7	6	8	4
4/26/2010	2	29	A	A	2	D	F	B	2	RM	335	3	3	1	9	8	6	4
4/26/2010	2	29	A	A	2	D	F	B	3	C	646	8	6	6	9	8	6	6
4/26/2010	2	29	A	A	2	D	F	B	4	BTS	276	4	4	3	9	7	7	5
4/26/2010	2	29	A	A	2	D	F	B	5	BB	413	1	1	1	6	6	7	6
4/26/2010	2	29	A	A	2	D	F	B	6	CG	530	8	7	7	9	7	8	8
4/26/2010	2	30	A	A	3	B	M	H	1	BB	413	7	7	7	7	8	9	8
4/26/2010	2	30	A	A	3	B	M	H	2	Ch	867	6	6	6	6	6	7	4
4/26/2010	2	30	A	A	3	B	M	H	3	C	646	.	6	5	5	4	5	5
4/26/2010	2	30	A	A	3	B	M	H	4	RM	335	5	4	5	6	4	6	6
4/26/2010	2	30	A	A	3	B	M	H	5	BTS	276	7	7	7	7	6	7	7
4/26/2010	2	30	A	A	3	B	M	H	6	CG	530	.	.	.	.	.	.	.
4/19/2010	1	31	B	A	2	D	F	W	1	Ch	139	7	7	3	8	8	7	7
4/19/2010	1	31	B	A	2	D	F	W	2	BB	384	5	3	4	6	5	4	5
4/19/2010	1	31	B	A	2	D	F	W	3	BTS	977	5	6	5	6	6	7	6
4/19/2010	1	31	B	A	2	D	F	W	4	RM	960	3	3	4	4	5	4	4
4/19/2010	1	31	B	A	2	D	F	W	5	CG	477	8	7	6	6	6	8	6
4/19/2010	1	31	B	A	2	D	F	W	6	C	501	6	6	3	6	7	7	7
4/19/2010	1	32	B	A	4	D	M	W	1	Ch	139	4	4	3	6	6	7	6
4/19/2010	1	32	B	A	4	D	M	W	2	BB	384	2	3	1	4	5	6	3
4/19/2010	1	32	B	A	4	D	M	W	3	BTS	977	3	2	2	4	4	6	3
4/19/2010	1	32	B	A	4	D	M	W	4	RM	960	1	2	2	6	6	6	7
4/19/2010	1	32	B	A	4	D	M	W	5	CG	477	6	7	5	3	2	4	5
4/19/2010	1	32	B	A	4	D	M	W	6	C	501	5	5	3	6	5	5	7
4/19/2010	1	33	B	A	2	A	M	W	1	Ch	139	7	7	5	9	8	5	8
4/19/2010	1	33	B	A	2	A	M	W	2	BB	384	6	6	6	7	7	8	6
4/19/2010	1	33	B	A	2	A	M	W	3	BTS	977	6	6	5	7	7	8	7

4/19/2010	1	33	B	A	2	A	M	W	4	RM	960	8	8	6	5	9	4	8
4/19/2010	1	33	B	A	2	A	M	W	5	CG	477	7	8	6	5	5	8	3
4/19/2010	1	33	B	A	2	A	M	W	6	C	501	5	4	3	5	4	7	5
4/26/2010	2	34	A	A	4	A	F	W	1	CG	530	6	5	2	7	6	8	6
4/26/2010	2	34	A	A	4	A	F	W	2	C	646	5	5	3	7	5	8	5
4/26/2010	2	34	A	A	4	A	F	W	3	Ch	867	6	6	4	5	4	4	5
4/26/2010	2	34	A	A	4	A	F	W	4	BTS	276	7	8	8	7	7	9	4
4/26/2010	2	34	A	A	4	A	F	W	5	BB	413	7	7	7	6	5	6	6
4/26/2010	2	34	A	A	4	A	F	W	6	RM	335	6	5	5	6	7	7	6
4/26/2010	2	35	B	A	4	D	F	H	1	CG	530	6	5	3	6	6	8	6
4/26/2010	2	35	B	A	4	D	F	H	2	C	646	2	2	2	4	7	5	5
4/26/2010	2	35	B	A	4	D	F	H	3	Ch	867	6	5	5	7	7	7	7
4/26/2010	2	35	B	A	4	D	F	H	4	BTS	276	4	4	3	4	5	7	5
4/26/2010	2	35	B	A	4	D	F	H	5	BB	413	1	1	1	1	8	6	4
4/26/2010	2	35	B	A	4	D	F	H	6	RM	335	4	4	6	4	7	7	6
4/26/2010	2	36	B	A	2	D	F	W	1	BTS	276	9	9	7	7	8	7	6
4/26/2010	2	36	B	A	2	D	F	W	2	C	646	6	7	5	6	6	6	4
4/26/2010	2	36	B	A	2	D	F	W	3	Ch	867	.	4	5	6	4	5	6
4/26/2010	2	36	B	A	2	D	F	W	4	BB	413	4	5	2	4	3	3	4
4/26/2010	2	36	B	A	2	D	F	W	5	RM	335	3	3	.	5	4	5	3
4/26/2010	2	36	B	A	2	D	F	W	6	CG	530	5	5	3	5	6	3	4
4/26/2010	2	37	A	F	4	D	M	W	1	BTS	276	6	7	4	6	6	6	5
4/26/2010	2	37	A	F	4	D	M	W	2	C	646	8	8	7	6	7	5	6
4/26/2010	2	37	A	F	4	D	M	W	3	Ch	867	7	8	8	5	5	8	6
4/26/2010	2	37	A	F	4	D	M	W	4	BB	413	5	3	3	4	3	6	4
4/26/2010	2	37	A	F	4	D	M	W	5	RM	335	6	6	6	5	6	4	4
4/26/2010	2	37	A	F	4	D	M	W	6	CG	530	4	3	7	4	4	5	3
4/26/2010	2	38	A	A	3	D	F	W	1	BTS	276	7	6	6	7	7	6	9
4/26/2010	2	38	A	A	3	D	F	W	2	C	646	5	5	4	5	9	4	8
4/26/2010	2	38	A	A	3	D	F	W	3	Ch	867	7	7	7	6	7	7	8
4/26/2010	2	38	A	A	3	D	F	W	4	BB	413	7	7	6	7	8	7	8
4/26/2010	2	38	A	A	3	D	F	W	5	RM	335	7	8	7	8	5	5	5
4/26/2010	2	38	A	A	3	D	F	W	6	CG	530	8	8	8	8	4	9	5

4/26/2010	2	39	B	A	2	D	F	W	1	Ch	867	8	8	7	7	9	9	8
4/26/2010	2	39	B	A	2	D	F	W	2	RM	335	2	1	8	8	8	4	8
4/26/2010	2	39	B	A	2	D	F	W	3	C	646	4	4	6	7	6	8	4
4/26/2010	2	39	B	A	2	D	F	W	4	BTS	276	8	7	4	8	7	7	4
4/26/2010	2	39	B	A	2	D	F	W	5	BB	413	3	2	6	7	7	7	3
4/26/2010	2	39	B	A	2	D	F	W	6	CG	530	4	5	4	6	6	4	2
4/26/2010	2	40	B	A	3	D	F	W	1	Ch	867	8	8	6	8	7	8	8
4/26/2010	2	40	B	A	3	D	F	W	2	RM	335	4	3	3	7	7	5	5
4/26/2010	2	40	B	A	3	D	F	W	3	C	646	6	6	5	7	7	7	5
4/26/2010	2	40	B	A	3	D	F	W	4	BTS	276	7	8	5	7	7	6	5
4/26/2010	2	40	B	A	3	D	F	W	5	BB	413	8	8	6	7	6	6	6
4/26/2010	2	40	B	A	3	D	F	W	6	CG	530	8	8	6	8	8	8	7
4/26/2010	2	41	A	A	3	D	F	W	1	Ch	867	7	6	7	7	7	8	9
4/26/2010	2	41	A	A	3	D	F	W	2	RM	335	2	2	6	8	6	2	8
4/26/2010	2	41	A	A	3	D	F	W	3	C	646	8	7	5	6	6	9	6
4/26/2010	2	41	A	A	3	D	F	W	4	BTS	276	5	4	2	4	4	5	2
4/26/2010	2	41	A	A	3	D	F	W	5	BB	413	7	7	6	6	6	8	6
4/26/2010	2	41	A	A	3	D	F	W	6	CG	530	4	3	6	5	5	3	3
4/26/2010	2	42	B	A	3	D	M	W	1	Ch	867	6	6	6	8	5	7	6
4/26/2010	2	42	B	A	3	D	M	W	2	RM	335	7	6	6	4	4	6	4
4/26/2010	2	42	B	A	3	D	M	W	3	C	646	6	6	8	6	6	7	5
4/26/2010	2	42	B	A	3	D	M	W	4	BTS	276	7	7	7	7	8	7	6
4/26/2010	2	42	B	A	3	D	M	W	5	BB	413	7	7	8	6	7	6	6
4/26/2010	2	42	B	A	3	D	M	W	6	CG	530	7	6	6	4	4	7	5
5/3/2010	3	43	A	A	3	D	F	W	1	CG	470	7	8	6	6	6	7	7
5/3/2010	3	43	A	A	3	D	F	W	2	RM	157	6	6	8	6	6	4	3
5/3/2010	3	43	A	A	3	D	F	W	3	C	837	7	8	8	6	8	8	8
5/3/2010	3	43	A	A	3	D	F	W	4	Ch	640	9	8	7	8	7	7	7
5/3/2010	3	43	A	A	3	D	F	W	5	BB	351	5	4	3	5	4	3	3
5/3/2010	3	43	A	A	3	D	F	W	6	BTS	850	9	9	7	8	8	8	7
5/3/2010	3	44	A	A	3	D	M	WH	1	CG	470	7	7	4	4	5	8	2
5/3/2010	3	44	A	A	3	D	M	WH	2	RM	157	4	3	6	8	8	2	6
5/3/2010	3	44	A	A	3	D	M	WH	3	C	837	8	8	8	9	9	9	8

5/3/2010	3	44	A	A	3	D	M	WH	4	Ch	640	7	5	4	5	6	3	2
5/3/2010	3	44	A	A	3	D	M	WH	5	BB	351	9	9	9	9	9	8	8
5/3/2010	3	44	A	A	3	D	M	WH	6	BTS	850	7	6	5	4	4	5	3
4/26/2010	2	45	A	A	4	D	F	H	1	BB	413	7	7	6	7	8	8	6
4/26/2010	2	45	A	A	4	D	F	H	2	Ch	867	6	6	4	6	7	8	6
4/26/2010	2	45	A	A	4	D	F	H	3	C	646	8	8	6	7	8	5	7
4/26/2010	2	45	A	A	4	D	F	H	4	RM	335	6	4	3	7	4	8	9
4/26/2010	2	45	A	A	4	D	F	H	5	BTS	276	6	6	7	6	7	8	9
4/26/2010	2	45	A	A	4	D	F	H	6	CG	530	6	6	2	4	4	8	6
4/26/2010	2	46	A	A	2	D	M	AP	1	BB	413	6	5	5	6	7	7	7
4/26/2010	2	46	A	A	2	D	M	AP	2	Ch	867	8	8	8	7	7	8	7
4/26/2010	2	46	A	A	2	D	M	AP	3	C	646	5	6	5	6	4	7	8
4/26/2010	2	46	A	A	2	D	M	AP	4	RM	335	3	3	8	3	3	3	6
4/26/2010	2	46	A	A	2	D	M	AP	5	BTS	276	7	7	5	7	7	7	7
4/26/2010	2	46	A	A	2	D	M	AP	6	CG	530	4	4	4	5	4	3	4
4/26/2010	2	47	A	A	6	A	F	W	1	BB	413	7	5	3	9	6	8	9
4/26/2010	2	47	A	A	6	A	F	W	2	Ch	867	7	8	8	6	8	9	7
4/26/2010	2	47	A	A	6	A	F	W	3	C	646	4	5	2	8	9	8	9
4/26/2010	2	47	A	A	6	A	F	W	4	RM	335	3	3	7	9	9	5	9
4/26/2010	2	47	A	A	6	A	F	W	5	BTS	276	6	9	9	7	8	8	9
4/26/2010	2	47	A	A	6	A	F	W	6	CG	530	6	8	6	9	3	7	9
5/3/2010	3	48	A	A	3	D	F	W	1	CG	470	7	7	8	6	6	6	6
5/3/2010	3	48	A	A	3	D	F	W	2	RM	157	6	5	7	5	7	8	5
5/3/2010	3	48	A	A	3	D	F	W	3	C	837	6	6	7	4	6	7	4
5/3/2010	3	48	A	A	3	D	F	W	4	Ch	640	8	8	7	7	8	6	8
5/3/2010	3	48	A	A	3	D	F	W	5	BB	351	8	7	7	8	8	8	8
5/3/2010	3	48	A	A	3	D	F	W	6	BTS	850	8	7	6	7	6	6	5
5/3/2010	3	49	A	A	2	D	F	W	1	CG	470	7	7	5	6	8	7	9
5/3/2010	3	49	A	A	2	D	F	W	2	RM	157	3	3	6	4	4	4	4
5/3/2010	3	49	A	A	2	D	F	W	3	C	837	5	4	6	5	4	4	7
5/3/2010	3	49	A	A	2	D	F	W	4	Ch	640	1	1	6	4	4	2	4
5/3/2010	3	49	A	A	2	D	F	W	5	BB	351	4	6	4	6	7	7	6
5/3/2010	3	49	A	A	2	D	F	W	6	BTS	850	2	1	3	3	3	2	4

5/3/2010	3	50	B	A	5	D	F	W	1	CG	470	9	8	8	6	5	7	6
5/3/2010	3	50	B	A	5	D	F	W	2	RM	157	3	2	2	2	4	3	4
5/3/2010	3	50	B	A	5	D	F	W	3	C	837	5	6	3	3	5	5	3
5/3/2010	3	50	B	A	5	D	F	W	4	Ch	640	8	8	7	7	8	8	8
5/3/2010	3	50	B	A	5	D	F	W	5	BB	351	6	6	5	7	7	6	7
5/3/2010	3	50	B	A	5	D	F	W	6	BTS	850	8	8	8	7	8	8	7
4/26/2010	2	51	B	A	4	D	F	W	1	CG	530	8	7	5	6	8	8	8
4/26/2010	2	51	B	A	4	D	F	W	2	C	646	6	6	4	6	6	6	5
4/26/2010	2	51	B	A	4	D	F	W	3	Ch	867	3	3	7	5	4	4	6
4/26/2010	2	51	B	A	4	D	F	W	4	BTS	276	3	3	7	3	4	4	3
4/26/2010	2	51	B	A	4	D	F	W	5	BB	413	3	3	7	6	6	3	6
4/26/2010	2	51	B	A	4	D	F	W	6	RM	335	2	2	8	5	5	2	7
4/26/2010	2	52	A	A	4	D	M	W	1	CG	530	5	4	3	9	9	7	8
4/26/2010	2	52	A	A	4	D	M	W	2	C	646	3	2	3	7	8	7	7
4/26/2010	2	52	A	A	4	D	M	W	3	Ch	867	5	4	4	8	8	4	8
4/26/2010	2	52	A	A	4	D	M	W	4	BTS	276	5	4	4	8	7	7	8
4/26/2010	2	52	A	A	4	D	M	W	5	BB	413	4	3	3	8	7	7	8
4/26/2010	2	52	A	A	4	D	M	W	6	RM	335	7	6	5	7	7	6	7
4/26/2010	2	53	B	A	5	D	M	W	1	CG	530	5	3	2	8	8	6	8
4/26/2010	2	53	B	A	5	D	M	W	2	C	646	6	7	6	6	6	7	7
4/26/2010	2	53	B	A	5	D	M	W	3	Ch	867	7	6	5	6	4	5	9
4/26/2010	2	53	B	A	5	D	M	W	4	BTS	276	4	3	3	4	5	6	3
4/26/2010	2	53	B	A	5	D	M	W	5	BB	413	8	8	7	6	7	6	6
4/26/2010	2	53	B	A	5	D	M	W	6	RM	335	6	5	6	3	3	7	4
4/26/2010	2	54	A	A	4	D	F	W	1	BTS	276	6	6	5	7	6	8	5
4/26/2010	2	54	A	A	4	D	F	W	2	C	646	6	7	7	5	5	5	6
4/26/2010	2	54	A	A	4	D	F	W	3	Ch	867	8	8	5	7	7	6	7
4/26/2010	2	54	A	A	4	D	F	W	4	BB	413	5	4	6	7	7	8	5
4/26/2010	2	54	A	A	4	D	F	W	5	RM	335	7	7	7	6	7	5	4
4/26/2010	2	54	A	A	4	D	F	W	6	CG	530	5	4	7	5	5	5	6
4/26/2010	2	55	B	A	2	D	M	W	1	BTS	276	6	5	4	6	6	7	7
4/26/2010	2	55	B	A	2	D	M	W	2	C	646	7	7	7	7	7	7	8
4/26/2010	2	55	B	A	2	D	M	W	3	Ch	867	8	8	6	7	8	8	8

4/26/2010	2	55	B	A	2	D	M	W	4	BB	413	6	6	6	6	6	7	6
4/26/2010	2	55	B	A	2	D	M	W	5	RM	335	5	5	5	6	6	6	6
4/26/2010	2	55	B	A	2	D	M	W	6	CG	530	6	6	6	6	6	6	6
4/26/2010	2	56	A	A	3	A	F	W	1	BTS	276	7	6	7	7	8	8	7
4/26/2010	2	56	A	A	3	A	F	W	2	C	646	4	3	6	5	5	6	5
4/26/2010	2	56	A	A	3	A	F	W	3	Ch	867	6	6	6	5	5	8	6
4/26/2010	2	56	A	A	3	A	F	W	4	BB	413	7	7	7	5	6	7	5
4/26/2010	2	56	A	A	3	A	F	W	5	RM	335	6	4	7	7	6	6	4
4/26/2010	2	56	A	A	3	A	F	W	6	CG	530	7	7	6	7	6	8	5
5/3/2010	3	57	A	A	4	D	F	W	1	BTS	850	7	7	6	7	7	8	8
5/3/2010	3	57	A	A	4	D	F	W	2	Ch	640	5	6	5	4	6	6	5
5/3/2010	3	57	A	A	4	D	F	W	3	C	837	5	4	7	4	4	3	4
5/3/2010	3	57	A	A	4	D	F	W	4	CG	470	4	3	3	3	2	3	2
5/3/2010	3	57	A	A	4	D	F	W	5	BB	351	7	7	5	6	6	8	7
5/3/2010	3	57	A	A	4	D	F	W	6	RM	157	2	1	7	3	4	1	3
5/3/2010	3	58	A	A	2	B	F	W	1	BTS	850	6	5	6	7	8	6	8
5/3/2010	3	58	A	A	2	B	F	W	2	Ch	640	5	5	3	5	6	4	5
5/3/2010	3	58	A	A	2	B	F	W	3	C	837	4	3	5	5	4	5	3
5/3/2010	3	58	A	A	2	B	F	W	4	CG	470	7	6	8	7	6	8	7
5/3/2010	3	58	A	A	2	B	F	W	5	BB	351	5	6	5	4	5	5	4
5/3/2010	3	58	A	A	2	B	F	W	6	RM	157	3	3	7	5	6	3	4
5/3/2010	3	59	B	B	2	C	M	W	1	BTS	850	7	7	4	9	9	6	9
5/3/2010	3	59	B	B	2	C	M	W	2	Ch	640	3	3	5	7	5	7	4
5/3/2010	3	59	B	B	2	C	M	W	3	C	837	7	6	3	6	8	7	7
5/3/2010	3	59	B	B	2	C	M	W	4	CG	470	1	1	1	1	1	1	1
5/3/2010	3	59	B	B	2	C	M	W	5	BB	351	1	1	9	1	9	9	9
5/3/2010	3	59	B	B	2	C	M	W	6	RM	157	5	3	6	9	9	9	9
5/3/2010	3	60	B	A	4	D	F	W	1	BTS	850	7	7	7	8	7	7	6
5/3/2010	3	60	B	A	4	D	F	W	2	Ch	640	5	5	4	7	7	4	5
5/3/2010	3	60	B	A	4	D	F	W	3	C	837	3	2	2	6	7	5	4
5/3/2010	3	60	B	A	4	D	F	W	4	CG	470	7	6	3	7	7	5	6
5/3/2010	3	60	B	A	4	D	F	W	5	BB	351	7	7	7	8	7	7	6
5/3/2010	3	60	B	A	4	D	F	W	6	RM	157	8	8	6	7	7	5	6

5/3/2010	3	61	B	A	6	D	M	W	1	BTS	850	9	9	9	9	9	9	9
5/3/2010	3	61	B	A	6	D	M	W	2	Ch	640	7	8	8	9	9	8	9
5/3/2010	3	61	B	A	6	D	M	W	3	C	837	3	4	5	8	8	6	7
5/3/2010	3	61	B	A	6	D	M	W	4	CG	470	6	6	5	6	7	6	8
5/3/2010	3	61	B	A	6	D	M	W	5	BB	351	6	6	6	3	4	5	4
5/3/2010	3	61	B	A	6	D	M	W	6	RM	157	8	8	8	8	8	8	8
5/3/2010	3	62	B	A	4	D	M	AP	1	BTS	850	7	7	5	8	8	7	8
5/3/2010	3	62	B	A	4	D	M	AP	2	Ch	640	4	4	2	3	3	3	1
5/3/2010	3	62	B	A	4	D	M	AP	3	C	837	4	4	7	5	5	7	2
5/3/2010	3	62	B	A	4	D	M	AP	4	CG	470	7	5	5	9	9	4	8
5/3/2010	3	62	B	A	4	D	M	AP	5	BB	351	6	8	7	5	7	7	5
5/3/2010	3	62	B	A	4	D	M	AP	6	RM	157	7	5	.	8	8	4	8
4/26/2010	2	63	A	A	5	A	F	W	1	CG	530	9	8	9	9	8	9	4
4/26/2010	2	63	A	A	5	A	F	W	2	C	646	3	3	4	7	7	6	5
4/26/2010	2	63	A	A	5	A	F	W	3	Ch	867	9	9	6	8	8	9	7
4/26/2010	2	63	A	A	5	A	F	W	4	BTS	276	6	5	2	5	7	8	4
4/26/2010	2	63	A	A	5	A	F	W	5	BB	413	8	8	7	8	8	9	8
4/26/2010	2	63	A	A	5	A	F	W	6	RM	335	1	1	1	3	5	1	1
4/26/2010	2	64	A	A	1	D	F	W	1	CG	530	6	5	3	7	7	8	6
4/26/2010	2	64	A	A	1	D	F	W	2	C	646	3	4	4	5	7	7	8
4/26/2010	2	64	A	A	1	D	F	W	3	Ch	867	7	7	7	7	7	7	7
4/26/2010	2	64	A	A	1	D	F	W	4	BTS	276	3	3	6	5	5	6	5
4/26/2010	2	64	A	A	1	D	F	W	5	BB	413	3	2	3	4	3	5	5
4/26/2010	2	64	A	A	1	D	F	W	6	RM	335	7	7	7	7	7	7	5
4/26/2010	2	65	B	A	1	D	F	H	1	CG	530	5	5	2	7	6	6	6
4/26/2010	2	65	B	A	1	D	F	H	2	C	646	6	6	6	7	7	6	7
4/26/2010	2	65	B	A	1	D	F	H	3	Ch	867	6	6	5	6	5	5	7
4/26/2010	2	65	B	A	1	D	F	H	4	BTS	276	6	6	5	6	7	7	5
4/26/2010	2	65	B	A	1	D	F	H	5	BB	413	8	5	4	6	7	6	5
4/26/2010	2	65	B	A	1	D	F	H	6	RM	335	4	3	7	5	5	4	6
4/26/2010	2	66	B	A	1	D	F	W	1	CG	530	8	7	6	8	8	6	7
4/26/2010	2	66	B	A	1	D	F	W	2	C	646	6	6	6	6	6	6	6
4/26/2010	2	66	B	A	1	D	F	W	3	Ch	867	9	9	7	9	8	7	8

4/26/2010	2	66	B	A	1	D	F	W	4	BTS	276	9	9	8	7	8	7	6
4/26/2010	2	66	B	A	1	D	F	W	5	BB	413	9	9	7	9	9	7	9
4/26/2010	2	66	B	A	1	D	F	W	6	RM	335	4	4	7	7	7	6	6
5/3/2010	3	67	E	D	2	C	F	H	1	RM	157	4	4	4	4	4	4	4
5/3/2010	3	67	E	D	2	C	F	H	2	Ch	640	6	6	5	6	6	6	6
5/3/2010	3	67	E	D	2	C	F	H	3	BTS	850	6	7	6	7	7	7	6
5/3/2010	3	67	E	D	2	C	F	H	4	CG	470	3	3	3	3	3	3	3
5/3/2010	3	67	E	D	2	C	F	H	5	C	837	2	2	2	2	2	3	3
5/3/2010	3	67	E	D	2	C	F	H	6	BB	351	6	5	3	5	5	5	5
5/3/2010	3	68	B	A	4	D	F	W	1	RM	157	7	6	4	7	6	6	4
5/3/2010	3	68	B	A	4	D	F	W	2	Ch	640	7	6	4	7	7	6	7
5/3/2010	3	68	B	A	4	D	F	W	3	BTS	850	6	6	5	6	6	6	6
5/3/2010	3	68	B	A	4	D	F	W	4	CG	470	4	4	3	5	4	4	3
5/3/2010	3	68	B	A	4	D	F	W	5	C	837	3	3	4	4	4	4	5
5/3/2010	3	68	B	A	4	D	F	W	6	BB	351	2	3	4	5	5	5	3
5/3/2010	3	69	B	A	1	D	F	AP	1	RM	157	6	5	6	7	7	7	7
5/3/2010	3	69	B	A	1	D	F	AP	2	Ch	640	8	8	7	8	8	8	6
5/3/2010	3	69	B	A	1	D	F	AP	3	BTS	850	8	7	7	7	7	7	6
5/3/2010	3	69	B	A	1	D	F	AP	4	CG	470	4	3	6	7	7	7	6
5/3/2010	3	69	B	A	1	D	F	AP	5	C	837	3	2	6	4	5	4	5
5/3/2010	3	69	B	A	1	D	F	AP	6	BB	351	4	3	6	5	6	6	6
5/3/2010	3	70	B	A	5	D	M	W	1	RM	157	6	6	5	6	6	4	6
5/3/2010	3	70	B	A	5	D	M	W	2	Ch	640	7	7	6	7	7	5	6
5/3/2010	3	70	B	A	5	D	M	W	3	BTS	850	6	6	5	6	6	6	4
5/3/2010	3	70	B	A	5	D	M	W	4	CG	470	5	5	4	5	5	6	5
5/3/2010	3	70	B	A	5	D	M	W	5	C	837	5	4	5	6	6	5	6
5/3/2010	3	70	B	A	5	D	M	W	6	BB	351	6	5	5	6	5	5	4
5/3/2010	3	71	B	A	1	D	F	W	1	RM	157	8	7	5	6	6	8	7
5/3/2010	3	71	B	A	1	D	F	W	2	Ch	640	8	8	8	8	7	8	3
5/3/2010	3	71	B	A	1	D	F	W	3	BTS	850	3	2	6	4	2	4	2
5/3/2010	3	71	B	A	1	D	F	W	4	CG	470	8	8	7	5	5	4	5
5/3/2010	3	71	B	A	1	D	F	W	5	C	837	3	4	3	2	3	3	5
5/3/2010	3	71	B	A	1	D	F	W	6	BB	351	7	7	5	8	8	9	9

5/3/2010	3	72	B	A	1	D	F	W	1	RM	157	8	8	6	8	7	7	8
5/3/2010	3	72	B	A	1	D	F	W	2	Ch	640	6	6	1	7	7	7	3
5/3/2010	3	72	B	A	1	D	F	W	3	BTS	850	3	3	5	7	7	6	4
5/3/2010	3	72	B	A	1	D	F	W	4	CG	470	6	8	7	6	7	8	4
5/3/2010	3	72	B	A	1	D	F	W	5	C	837	6	7	6	6	7	7	3
5/3/2010	3	72	B	A	1	D	F	W	6	BB	351	8	7	6	7	7	8	7
5/3/2010	3	73	A	A	3	B	M	W	1	C	837	3	3	2	7	7	6	6
5/3/2010	3	73	A	A	3	B	M	W	2	BTS	850	4	3	2	7	7	7	6
5/3/2010	3	73	A	A	3	B	M	W	3	CG	470	5	4	3	7	7	7	6
5/3/2010	3	73	A	A	3	B	M	W	4	RM	157	2	2	3	7	7	6	6
5/3/2010	3	73	A	A	3	B	M	W	5	Ch	640	5	4	2	7	7	6	7
5/3/2010	3	73	A	A	3	B	M	W	6	BB	351	6	4	3	7	7	6	7
5/3/2010	3	74	B	B	2	C	F	H	1	C	837	7	8	7	8	9	9	9
5/3/2010	3	74	B	B	2	C	F	H	2	BTS	850	7	6	5	8	8	8	8
5/3/2010	3	74	B	B	2	C	F	H	3	CG	470	7	8	7	7	7	7	7
5/3/2010	3	74	B	B	2	C	F	H	4	RM	157	6	6	7	8	7	8	5
5/3/2010	3	74	B	B	2	C	F	H	5	Ch	640	7	8	8	8	9	8	9
5/3/2010	3	74	B	B	2	C	F	H	6	BB	351	9	9	7	9	8	8	9
5/3/2010	3	75	B	A	2	D	F	H	1	C	837	8	7	3	6	7	9	6
5/3/2010	3	75	B	A	2	D	F	H	2	BTS	850	8	8	5	8	7	8	8
5/3/2010	3	75	B	A	2	D	F	H	3	CG	470	5	5	2	4	3	4	5
5/3/2010	3	75	B	A	2	D	F	H	4	RM	157	4	5	7	7	7	7	7
5/3/2010	3	75	B	A	2	D	F	H	5	Ch	640	8	8	5	6	6	8	7
5/3/2010	3	75	B	A	2	D	F	H	6	BB	351	6	5	3	8	8	8	9
5/3/2010	3	76	B	A	2	B	F	W	1	C	837	7	7	6	7	6	7	6
5/3/2010	3	76	B	A	2	B	F	W	2	BTS	850	7	6	7	7	7	8	6
5/3/2010	3	76	B	A	2	B	F	W	3	CG	470	5	5	4	5	5	5	4
5/3/2010	3	76	B	A	2	B	F	W	4	RM	157	5	6	5	4	5	5	6
5/3/2010	3	76	B	A	2	B	F	W	5	Ch	640	7	8	7	7	7	8	7
5/3/2010	3	76	B	A	2	B	F	W	6	BB	351	6	6	5	4	5	6	6
5/3/2010	3	77	B	A	4	D	F	W	1	C	837	7	7	5	8	7	5	8
5/3/2010	3	77	B	A	4	D	F	W	2	BTS	850	5	5	3	4	5	5	4
5/3/2010	3	77	B	A	4	D	F	W	3	CG	470	4	7	6	3	3	2	5

5/3/2010	3	77	B	A	4	D	F	W	4	RM	157	6	7	6	3	4	7	3
5/3/2010	3	77	B	A	4	D	F	W	5	Ch	640	3	1	1	6	5	6	5
5/3/2010	3	77	B	A	4	D	F	W	6	BB	351	6	4	3	8	7	7	9
5/3/2010	3	78	F	F	3	C	F	W	1	C	837	7	7	5	7	7	7	7
5/3/2010	3	78	F	F	3	C	F	W	2	BTS	850	7	7	5	7	7	7	7
5/3/2010	3	78	F	F	3	C	F	W	3	CG	470	7	7	5	7	7	7	7
5/3/2010	3	78	F	F	3	C	F	W	4	RM	157	7	7	5	7	7	7	6
5/3/2010	3	78	F	F	3	C	F	W	5	Ch	640	7	7	5	7	7	7	7
5/3/2010	3	78	F	F	3	C	F	W	6	BB	351	7	7	5	7	7	7	7
5/3/2010	3	79	B	A	1	D	M	W	1	CG	470	7	6	7	8	5	4	6
5/3/2010	3	79	B	A	1	D	M	W	2	RM	157	3	3	6	6	6	6	4
5/3/2010	3	79	B	A	1	D	M	W	3	C	837	5	6	6	3	3	4	3
5/3/2010	3	79	B	A	1	D	M	W	4	Ch	640	4	4	5	7	7	7	6
5/3/2010	3	79	B	A	1	D	M	W	5	BB	351	3	4	7	2	2	2	3
5/3/2010	3	79	B	A	1	D	M	W	6	BTS	850	5	4	6	6	5	7	2
5/3/2010	3	80	C	C	2	D	F	W	1	CG	470	4	2	7	2	3	4	5
5/3/2010	3	80	C	C	2	D	F	W	2	RM	157	2	3	9	7	7	8	8
5/3/2010	3	80	C	C	2	D	F	W	3	C	837	7	6	6	6	6	8	8
5/3/2010	3	80	C	C	2	D	F	W	4	Ch	640	4	6	4	8	8	9	5
5/3/2010	3	80	C	C	2	D	F	W	5	BB	351	6	2	9	7	6	6	6
5/3/2010	3	80	C	C	2	D	F	W	6	BTS	850	7	5	3	5	6	7	6
5/3/2010	3	81	E	F	2	C	F	W	1	CG	470	6	6	7	6	7	7	6
5/3/2010	3	81	E	F	2	C	F	W	2	RM	157	4	3	6	6	6	6	6
5/3/2010	3	81	E	F	2	C	F	W	3	C	837	3	3	3	3	4	8	3
5/3/2010	3	81	E	F	2	C	F	W	4	Ch	640	5	6	5	6	6	6	6
5/3/2010	3	81	E	F	2	C	F	W	5	BB	351	3	3	3	3	4	6	2
5/3/2010	3	81	E	F	2	C	F	W	6	BTS	850	2	2	7	6	7	6	7
5/3/2010	3	82	B	A	3	D	M	B	1	BTS	850	8	8	8	9	9	9	9
5/3/2010	3	82	B	A	3	D	M	B	2	Ch	640	6	6	6	8	7	6	4
5/3/2010	3	82	B	A	3	D	M	B	3	C	837	3	2	1	6	6	6	6
5/3/2010	3	82	B	A	3	D	M	B	4	CG	470	1	1	1	1	9	1	9
5/3/2010	3	82	B	A	3	D	M	B	5	BB	351	3	3	1	1	9	3	6
5/3/2010	3	82	B	A	3	D	M	B	6	RM	157	1	1	1	9	9	7	4

5/3/2010	3	83	B	B	2	D	M	W	1	BTS	850	7	7	6	6	7	8	8
5/3/2010	3	83	B	B	2	D	M	W	2	Ch	640	9	8	8	7	7	7	6
5/3/2010	3	83	B	B	2	D	M	W	3	C	837	6	7	7	7	7	6	6
5/3/2010	3	83	B	B	2	D	M	W	4	CG	470	6	6	7	7	7	7	5
5/3/2010	3	83	B	B	2	D	M	W	5	BB	351	7	7	7	7	8	8	6
5/3/2010	3	83	B	B	2	D	M	W	6	RM	157	6	4	7	6	6	6	4
5/3/2010	3	84	B	C	3	D	F	.	1	BTS	850	6	4	4	2	3	5	6
5/3/2010	3	84	B	C	3	D	F	.	2	Ch	640	6	5	6	6	6	5	5
5/3/2010	3	84	B	C	3	D	F	.	3	C	837	4	4	5	3	5	4	5
5/3/2010	3	84	B	C	3	D	F	.	4	CG	470	7	7	7	6	6	5	5
5/3/2010	3	84	B	C	3	D	F	.	5	BB	351	2	2	5	4	3	5	5
5/3/2010	3	84	B	C	3	D	F	.	6	RM	157	2	3	6	5	6	5	5
5/3/2010	3	85	B	A	3	D	F	W	1	RM	157	7	6	5	6	5	6	6
5/3/2010	3	85	B	A	3	D	F	W	2	Ch	640	4	4	3	3	4	6	5
5/3/2010	3	85	B	A	3	D	F	W	3	BTS	850	6	5	4	3	3	7	3
5/3/2010	3	85	B	A	3	D	F	W	4	CG	470	6	6	4	6	6	7	6
5/3/2010	3	85	B	A	3	D	F	W	5	C	837	7	7	6	6	7	6	7
5/3/2010	3	85	B	A	3	D	F	W	6	BB	351	5	6	6	5	6	8	6
5/3/2010	3	86	B	A	1	D	F	W	1	RM	157	4	6	3	7	7	5	7
5/3/2010	3	86	B	A	1	D	F	W	2	Ch	640	6	7	7	8	8	5	5
5/3/2010	3	86	B	A	1	D	F	W	3	BTS	850	2	1	7	3	6	7	2
5/3/2010	3	86	B	A	1	D	F	W	4	CG	470	6	5	7	6	6	8	3
5/3/2010	3	86	B	A	1	D	F	W	5	C	837	6	7	6	7	8	8	7
5/3/2010	3	86	B	A	1	D	F	W	6	BB	351	3	2	2	3	7	6	3
5/3/2010	3	87	A	A	3	D	M	W	1	RM	157	6	6	4	8	7	7	4
5/3/2010	3	87	A	A	3	D	M	W	2	Ch	640	6	7	7	4	3	5	7
5/3/2010	3	87	A	A	3	D	M	W	3	BTS	850	4	3	2	2	8	2	8
5/3/2010	3	87	A	A	3	D	M	W	4	CG	470	8	8	6	8	8	7	8
5/3/2010	3	87	A	A	3	D	M	W	5	C	837	2	1	2	3	9	2	9
5/3/2010	3	87	A	A	3	D	M	W	6	BB	351	.	7	8	8	6	7	5
5/3/2010	3	88	B	B	2	B	F	W	1	C	837	5	6	6	5	5	5	4
5/3/2010	3	88	B	B	2	B	F	W	2	BTS	850	5	5	5	4	5	5	3
5/3/2010	3	88	B	B	2	B	F	W	3	CG	470	6	7	6	6	6	7	5

5/3/2010	3	88	B	B	2	B	F	W	4	RM	157	2	1	7	5	6	3	4
5/3/2010	3	88	B	B	2	B	F	W	5	Ch	640	7	7	6	6	6	7	6
5/3/2010	3	88	B	B	2	B	F	W	6	BB	351	7	7	7	7	7	8	8
5/3/2010	3	89	B	A	1	D	M	W	1	C	837	2	2	4	8	9	3	3
5/3/2010	3	89	B	A	1	D	M	W	2	BTS	850	2	5	1	7	7	5	3
5/3/2010	3	89	B	A	1	D	M	W	3	CG	470	2	2	3	3	2	3	3
5/3/2010	3	89	B	A	1	D	M	W	4	RM	157	6	6	4	5	4	4	3
5/3/2010	3	89	B	A	1	D	M	W	5	Ch	640	6	6	6	6	7	7	7
5/3/2010	3	89	B	A	1	D	M	W	6	BB	351	2	2	6	5	7	6	3
5/3/2010	3	90	B	A	3	D	M	W	1	C	837	7	7	7	7	7	8	7
5/3/2010	3	90	B	A	3	D	M	W	2	BTS	850	5	5	5	5	7	5	5
5/3/2010	3	90	B	A	3	D	M	W	3	CG	470	3	3	3	3	4	3	4
5/3/2010	3	90	B	A	3	D	M	W	4	RM	157	7	7	7	7	6	7	7
5/3/2010	3	90	B	A	3	D	M	W	5	Ch	640	6	6	6	7	7	7	8
5/3/2010	3	90	B	A	3	D	M	W	6	BB	351	7	7	7	7	7	7	7
5/3/2010	3	91	B	A	6	D	M	W	1	RM	157	8	7	7	8	7	9	5
5/3/2010	3	91	B	A	6	D	M	W	2	Ch	640	7	6	6	8	7	8	4
5/3/2010	3	91	B	A	6	D	M	W	3	BTS	850	8	9	7	7	8	9	7
5/3/2010	3	91	B	A	6	D	M	W	4	CG	470	7	7	7	6	6	7	6
5/3/2010	3	91	B	A	6	D	M	W	5	C	837	8	8	7	8	7	9	6
5/3/2010	3	91	B	A	6	D	M	W	6	BB	351	6	7	7	6	6	8	3
5/3/2010	3	93	B	A	2	D	M	W	1	BTS	850	5	5	4	5	7	5	1
5/3/2010	3	93	B	A	2	D	M	W	2	Ch	640	3	5	1	5	4	5	5
5/3/2010	3	93	B	A	2	D	M	W	3	C	837	3	1	3	5	4	2	2
5/3/2010	3	93	B	A	2	D	M	W	4	CG	470	3	3	2	5	5	3	5
5/3/2010	3	93	B	A	2	D	M	W	5	BB	351	7	7	7	7	4	5	7
5/3/2010	3	93	B	A	2	D	M	W	6	RM	157	2	1	7	5	5	2	5
5/3/2010	3	94	B	B	1	D	F	W	1	BTS	850	6	5	4	6	6	7	4
5/3/2010	3	94	B	B	1	D	F	W	2	Ch	640	6	4	2	4	4	4	7
5/3/2010	3	94	B	B	1	D	F	W	3	C	837	1	1	2	2	2	2	2
5/3/2010	3	94	B	B	1	D	F	W	4	CG	470	3	5	3	4	6	6	7
5/3/2010	3	94	B	B	1	D	F	W	5	BB	351	6	6	6	6	6	7	6
5/3/2010	3	94	B	B	1	D	F	W	6	RM	157	1	1	1	4	4	4	5

5/3/2010	3	95	B	A	1	D	F	W	1	BTS	850	6	6	5	6	6	7	9
5/3/2010	3	95	B	A	1	D	F	W	2	Ch	640	4	3	2	5	5	5	4
5/3/2010	3	95	B	A	1	D	F	W	3	C	837	5	5	5	2	4	5	1
5/3/2010	3	95	B	A	1	D	F	W	4	CG	470	7	6	7	7	7	7	9
5/3/2010	3	95	B	A	1	D	F	W	5	BB	351	2	3	4	5	4	5	4
5/3/2010	3	95	B	A	1	D	F	W	6	RM	157	1	1	9	7	9	1	9

CONSUMER COMMENT CODES

Code	Question
Q4	What did you LIKE about the FLAVOR of this sample?
Q5	What did you DISLIKE about the FLAVOR of this sample?
Q9	What did you LIKE about the TEXTURE of this sample?
Q10	What did you DISLIKE about the TEXTURE of this sample?
Q12	Please make any additional comments concerning the eating qualities of this sample that has not been covered in the questions above.

CONSUMER COMMENTS Q4

Date	B	P	Ord	Trt	Code	Q4
5/3/2010	3	7	5	BB	351	nothing really
5/3/2010	3	43	5	BB	351	.
5/3/2010	3	44	5	BB	351	juicy tender and pleasant taste
5/3/2010	3	48	5	BB	351	very good, not too 'animal tasting', good quality
5/3/2010	3	49	5	BB	351	it tastes like hamburger meat
5/3/2010	3	50	5	BB	351	.
5/3/2010	3	57	5	BB	351	not too strong, tastes similar to meat
5/3/2010	3	58	5	BB	351	not overwhelming
5/3/2010	3	59	5	BB	351	nothing
5/3/2010	3	60	5	BB	351	good aftertaste it wasn't too overpowering.
5/3/2010	3	61	5	BB	351	not bad dry meat taste
5/3/2010	3	62	5	BB	351	normal beef flavor
5/3/2010	3	67	6	BB	351	has almost a turkey flavor
5/3/2010	3	68	6	BB	351	typical of others
5/3/2010	3	69	6	BB	351	.
5/3/2010	3	70	6	BB	351	.
5/3/2010	3	71	6	BB	351	good beef and beef fat flavor
5/3/2010	3	72	6	BB	351	could have been a bit more intense in flavor, but overall I liked it
5/3/2010	3	73	6	BB	351	it had little
5/3/2010	3	74	6	BB	351	very fresh flavor
5/3/2010	3	75	6	BB	351	tasted like meat
5/3/2010	3	76	6	BB	351	.
5/3/2010	3	77	6	BB	351	.
5/3/2010	3	78	6	BB	351	beefy
5/3/2010	3	79	5	BB	351	beefy
5/3/2010	3	80	5	BB	351	.
5/3/2010	3	81	5	BB	351	.
5/3/2010	3	82	5	BB	351	it was bland.
5/3/2010	3	83	5	BB	351	n/a
5/3/2010	3	84	5	BB	351	nothing

5/3/2010	3	85	6	BB	351	I just like the flavor of meat	
5/3/2010	3	86	6	BB	351	nothing	
5/3/2010	3	87	6	BB	351	you could instantly taste a lot of natural flavors without any seasoning	
5/3/2010	3	88	6	BB	351	tasteful	
5/3/2010	3	89	6	BB	351	.	
5/3/2010	3	90	6	BB	351	good	
5/3/2010	3	91	6	BB	351	.	
5/3/2010	3	93	5	BB	351	.	
5/3/2010	3	94	5	BB	351	taste like grill/char	
5/3/2010	3	95	5	BB	351	.	
4/19/2010	1	1	5	BB	384	not much flavor	
4/19/2010	1	2	5	BB	384	It does have a slightly beef taste. This is a very normal taste. Very familiar.	
4/19/2010	1	3	5	BB	384	.	
4/19/2010	1	4	5	BB	384	good flavor	
4/19/2010	1	5	5	BB	384	Has a decent flavor, could be a little more intense.	
4/19/2010	1	6	5	BB	384	kind of bland, but still good	
4/19/2010	1	8	4	BB	384	I didn't really like it	
4/19/2010	1	9	4	BB	384	good beef flavor. I would enjoy this on a hamburger	
4/19/2010	1	10	4	BB	384		0
4/19/2010	1	11	2	BB	384	tastes fresh	
4/19/2010	1	12	2	BB	384	tasted kind of like normal ground beef	
4/19/2010	1	13	2	BB	384	tasted like a normal hamburger	
4/19/2010	1	14	4	BB	384	couldn't taste flavor	
4/19/2010	1	15	4	BB	384	.	
4/19/2010	1	16	4	BB	384	nice and subtle	
4/19/2010	1	17	2	BB	384	beef flavor strong	
4/19/2010	1	18	4	BB	384	not impressive	
4/19/2010	1	19	4	BB	384	not much	
4/19/2010	1	20	4	BB	384	it tastes fresh	
4/19/2010	1	21	5	BB	384	.	
4/19/2010	1	22	5	BB	384	kind of salty and pretty tasty	

4/19/2010	1	23	5	BB	384	.
4/19/2010	1	31	2	BB	384	it didn't outright taste bad
4/19/2010	1	32	2	BB	384	nothing
4/19/2010	1	33	2	BB	384	has a smokey-ness that imparts a good flavor
4/26/2010	2	24	1	BB	413	everything
4/26/2010	2	25	1	BB	413	I like how it is not so overpowering. When you would season the sample, I think it would be great.
4/26/2010	2	26	5	BB	413	not too intense but definitely not bland
4/26/2010	2	27	5	BB	413	not that intense
4/26/2010	2	28	5	BB	413	great flavor - close to commercial
4/26/2010	2	29	5	BB	413	.
4/26/2010	2	30	1	BB	413	natural (if they are) juices are delicious
4/26/2010	2	34	5	BB	413	.
4/26/2010	2	35	5	BB	413	do not enjoy the flavor
4/26/2010	2	36	4	BB	413	.
4/26/2010	2	37	4	BB	413	typical of unseasoned beef
4/26/2010	2	38	4	BB	413	strong flavoring even with one bite
4/26/2010	2	39	5	BB	413	.
4/26/2010	2	40	5	BB	413	tastes like typical ground beef
4/26/2010	2	41	5	BB	413	it/s good. It has just enough
4/26/2010	2	42	5	BB	413	intensity, full of flavor
4/26/2010	2	45	1	BB	413	not too strong
4/26/2010	2	46	1	BB	413	juicy flavor
4/26/2010	2	47	1	BB	413	it was juicy
4/26/2010	2	51	5	BB	413	beef like
4/26/2010	2	52	5	BB	413	nothing
4/26/2010	2	53	5	BB	413	this one was my favorite
4/26/2010	2	54	4	BB	413	it was strong
4/26/2010	2	55	4	BB	413	felt like there wasn’t very much
4/26/2010	2	56	4	BB	413	very potent and typical
4/26/2010	2	63	5	BB	413	there was a hint of smokiness.
4/26/2010	2	64	5	BB	413	.
4/26/2010	2	65	5	BB	413	more toned down yet good

4/26/2010	2	66	5	BB	413	very juicy, no strange after taste
4/26/2010	2	24	5	BTS	276	flavor stayed with me for a while
4/26/2010	2	25	5	BTS	276	.
4/26/2010	2	26	4	BTS	276	.
4/26/2010	2	27	4	BTS	276	overall really good
4/26/2010	2	28	4	BTS	276	.
4/26/2010	2	29	4	BTS	276	.
4/26/2010	2	30	5	BTS	276	has some flavor
4/26/2010	2	34	4	BTS	276	it was (beefy)
4/26/2010	2	35	4	BTS	276	.
4/26/2010	2	36	1	BTS	276	it didn't really taste too overwhelmingly meat, I like it
4/26/2010	2	37	1	BTS	276	very moist
4/26/2010	2	38	1	BTS	276	very easy to chew, somewhat flavoring, pretty tender
4/26/2010	2	39	4	BTS	276	full flavor, not too intense. To me it tasted like it had some pepper in it
4/26/2010	2	40	4	BTS	276	subtle flavor, not extremely bland
4/26/2010	2	41	4	BTS	276	not bad
4/26/2010	2	42	4	BTS	276	nice/consistent/somewhat intense
4/26/2010	2	45	5	BTS	276	.
4/26/2010	2	46	5	BTS	276	just tasted good
4/26/2010	2	47	5	BTS	276	it was really good
4/26/2010	2	51	4	BTS	276	was beef like, kind of
4/26/2010	2	52	4	BTS	276	nothing
4/26/2010	2	53	4	BTS	276	way too bland
4/26/2010	2	54	1	BTS	276	it tasted moist
4/26/2010	2	55	1	BTS	276	it has a juicy flavor, but it's not too overwhelming
4/26/2010	2	56	1	BTS	276	it is a strong typical ground beef flavor
4/26/2010	2	63	4	BTS	276	it tasted alright. It wasn't bad.
4/26/2010	2	64	4	BTS	276	kinda bitter
4/26/2010	2	65	4	BTS	276	n/a
4/26/2010	2	66	4	BTS	276	not plain, no weird after taste
5/3/2010	3	7	6	BTS	850	Really good. Strong with a good after taste.

5/3/2010	3	43	6	BTS	850	It is simply good.
5/3/2010	3	44	6	BTS	850	it was light on the flavor
5/3/2010	3	48	6	BTS	850	good natural flavor!
5/3/2010	3	49	6	BTS	850	nothing
5/3/2010	3	50	6	BTS	850	it had a natural flavor
5/3/2010	3	57	1	BTS	850	im not sure but it was good, it tastes normal
5/3/2010	3	58	1	BTS	850	fair - juicy
5/3/2010	3	59	1	BTS	850	not strong
5/3/2010	3	60	1	BTS	850	it was not too overpowering
5/3/2010	3	61	1	BTS	850	hearty, rich, and bold flavor that represents how meat should taste.
5/3/2010	3	62	1	BTS	850	it tastes like real beef flavor. Not too fatty.
5/3/2010	3	67	3	BTS	850	I liked the flavor, something you do not have to add seasoning
5/3/2010	3	68	3	BTS	850	not too strong
5/3/2010	3	69	3	BTS	850	nice beefy taste
5/3/2010	3	70	3	BTS	850	.
5/3/2010	3	71	3	BTS	850	more lean flavor than fat
5/3/2010	3	72	3	BTS	850	.
5/3/2010	3	73	2	BTS	850	nothing
5/3/2010	3	74	2	BTS	850	some beef flavor
5/3/2010	3	75	2	BTS	850	not much of an extra flavor besides beef
5/3/2010	3	76	2	BTS	850	beefy flavor
5/3/2010	3	77	2	BTS	850	could be good with strong seasonings
5/3/2010	3	78	2	BTS	850	like beef
5/3/2010	3	79	6	BTS	850	beefy start
5/3/2010	3	80	6	BTS	850	it's a sweet flavor
5/3/2010	3	81	6	BTS	850	.
5/3/2010	3	82	1	BTS	850	I like the juicy aspect of it.
5/3/2010	3	83	1	BTS	850	meat/beefy/brothy
5/3/2010	3	84	1	BTS	850	the flavor isn't appreciated
5/3/2010	3	85	3	BTS	850	meat flavored is always good
5/3/2010	3	86	3	BTS	850	nothing
5/3/2010	3	87	3	BTS	850	it tasted very natural
5/3/2010	3	88	2	BTS	850	.

5/3/2010	3	89	2	BTS	850	.
5/3/2010	3	90	2	BTS	850	n/a
5/3/2010	3	91	3	BTS	850	just strong enough
5/3/2010	3	93	1	BTS	850	.
5/3/2010	3	94	1	BTS	850	mild beefy flavor
5/3/2010	3	95	1	BTS	850	I liked the overall flavor, it was not overbearing
4/19/2010	1	1	4	BTS	977	tasted like regular ground beef
4/19/2010	1	2	4	BTS	977	It doesn't taste of fat. There is a hint of beef flavor.
4/19/2010	1	3	4	BTS	977	good sensation
4/19/2010	1	4	4	BTS	977	better flavor than last sample
4/19/2010	1	5	4	BTS	977	.
4/19/2010	1	6	4	BTS	977	good, not too much
4/19/2010	1	8	1	BTS	977	not a lot
4/19/2010	1	9	1	BTS	977	there was not much flavor but very juicy
4/19/2010	1	10	1	BTS	977	it was juicy/flavorful
4/19/2010	1	11	3	BTS	977	nothing
4/19/2010	1	12	3	BTS	977	nothing really
4/19/2010	1	13	3	BTS	977	normal hamburger taste
4/19/2010	1	14	1	BTS	977	couldn't taste flavor
4/19/2010	1	15	1	BTS	977	nothing
4/19/2010	1	16	1	BTS	977	no flavor
4/19/2010	1	17	3	BTS	977	beef flavor
4/19/2010	1	18	1	BTS	977	nothing, there is no flavor, just bland meat
4/19/2010	1	19	1	BTS	977	.
4/19/2010	1	20	1	BTS	977	it was not very intense
4/19/2010	1	21	4	BTS	977	tasted meatier than others
4/19/2010	1	22	4	BTS	977	actually overall pretty good despite its weak flavor
4/19/2010	1	23	4	BTS	977	.
4/19/2010	1	31	3	BTS	977	tasted good
4/19/2010	1	32	3	BTS	977	it tasted like beef
4/19/2010	1	33	3	BTS	977	once again, good aftertaste
4/19/2010	1	1	3	C	501	good beefy flavor

4/19/2010	1	2	3	C	501	You can taste the beef flavor.	
4/19/2010	1	3	3	C	501	.	
4/19/2010	1	4	3	C	501	.	
4/19/2010	1	5	3	C	501	.	
4/19/2010	1	6	3	C	501	not overpowering	
4/19/2010	1	8	2	C	501	it doesn't have any	
4/19/2010	1	9	2	C	501	flavor was not bad but still did not have much flavor	
4/19/2010	1	10	2	C	501		0
4/19/2010	1	11	6	C	501	tastes good, satisfying	
4/19/2010	1	12	6	C	501	it was eatable	
4/19/2010	1	13	6	C	501	tasted like a normal hamburger	
4/19/2010	1	14	2	C	501	don't like	
4/19/2010	1	15	2	C	501	better than the last one	
4/19/2010	1	16	2	C	501	did not like. Not enough flavor	
4/19/2010	1	17	6	C	501	beef flavor	
4/19/2010	1	18	2	C	501	there was more meat flavor, more pleasing	
4/19/2010	1	19	2	C	501	.	
4/19/2010	1	20	2	C	501	it tastes like it was seasoned	
4/19/2010	1	21	2	C	501	.	
4/19/2010	1	22	2	C	501	started off initially tasty	
4/19/2010	1	23	2	C	501	.	
4/19/2010	1	31	6	C	501	it tasted fine	
4/19/2010	1	32	6	C	501	it tasted how beef should taste	
4/19/2010	1	33	6	C	501	.	
4/26/2010	2	24	3	C	646	flavor it did have was good	
4/26/2010	2	25	3	C	646	I like that it is strong, but not intense, and it taste natural (not greasy)	
4/26/2010	2	26	2	C	646	.	
4/26/2010	2	27	3	C	646	it was just enough	
4/26/2010	2	28	3	C	646	.	
4/26/2010	2	29	3	C	646	very unique	
4/26/2010	2	30	3	C	646	wasn't bland	
4/26/2010	2	34	2	C	646	it was pretty safe as a hamburger with ketchup on it people would	

						not dislike it
4/26/2010	2	35	2	C	646	did not like the flavor at all
4/26/2010	2	36	2	C	646	tastes like a normal hamburger patty
4/26/2010	2	37	2	C	646	much lighter fluffier, flavor, almost like it is mixed with another meat
4/26/2010	2	38	2	C	646	nothing
4/26/2010	2	39	3	C	646	it wasn't too strong
4/26/2010	2	40	3	C	646	good flavor not too bland
4/26/2010	2	41	3	C	646	it wasn't too much but just enough
4/26/2010	2	42	3	C	646	more intense
4/26/2010	2	45	3	C	646	good aftertaste
4/26/2010	2	46	3	C	646	I can tell something was added in the cooking process
4/26/2010	2	47	3	C	646	not too salty
4/26/2010	2	51	2	C	646	it was almost beef like
4/26/2010	2	52	2	C	646	nothing
4/26/2010	2	53	2	C	646	.
4/26/2010	2	54	2	C	646	it was strong
4/26/2010	2	55	2	C	646	had more flavor, which I liked
4/26/2010	2	56	2	C	646	.
4/26/2010	2	63	2	C	646	it had a bit of smokey flavor to it. I liked that
4/26/2010	2	64	2	C	646	.
4/26/2010	2	65	2	C	646	wholesome savory
4/26/2010	2	66	2	C	646	product was juicy, I would have liked the color to be less pink because the color interfered with perception of flavor
5/3/2010	3	7	3	C	837	It's not too strong and not too weak. Just the right taste.
5/3/2010	3	43	3	C	837	It's strong but not in a bad way.
5/3/2010	3	44	3	C	837	had good, juicy taste
5/3/2010	3	48	3	C	837	typical
5/3/2010	3	49	3	C	837	nothing
5/3/2010	3	50	3	C	837	tasted like a burger
5/3/2010	3	57	3	C	837	.
5/3/2010	3	58	3	C	837	.
5/3/2010	3	59	3	C	837	typical taste, nothing fancy - tastes like frozen HEB patties

5/3/2010	3	60	3	C	837	.
5/3/2010	3	61	3	C	837	strong initial flavor (rich meat flavor)
5/3/2010	3	62	3	C	837	ground beef flavor
5/3/2010	3	67	5	C	837	did not
5/3/2010	3	68	5	C	837	not too strong
5/3/2010	3	69	5	C	837	.
5/3/2010	3	70	5	C	837	.
5/3/2010	3	71	5	C	837	not too fatty
5/3/2010	3	72	5	C	837	.
5/3/2010	3	73	1	C	837	it's juicy
5/3/2010	3	74	1	C	837	it has a very good taste to beef, very juicy
5/3/2010	3	75	1	C	837	did not have a strong flavor of any sort
5/3/2010	3	76	1	C	837	.
5/3/2010	3	77	1	C	837	.
5/3/2010	3	78	1	C	837	typical of beef
5/3/2010	3	79	3	C	837	more beefy than last sample
5/3/2010	3	80	3	C	837	.
5/3/2010	3	81	3	C	837	.
5/3/2010	3	82	3	C	837	nothing
5/3/2010	3	83	3	C	837	strong carmalized notes, less raw beef.
5/3/2010	3	84	3	C	837	nothing
5/3/2010	3	85	5	C	837	bold
5/3/2010	3	86	5	C	837	subtle sweetness to the meat
5/3/2010	3	87	5	C	837	nothing.
5/3/2010	3	88	1	C	837	liked the exterior of the patty
5/3/2010	3	89	1	C	837	.
5/3/2010	3	90	1	C	837	tasted beefy
5/3/2010	3	91	5	C	837	really good meat flavor
5/3/2010	3	93	3	C	837	.
5/3/2010	3	94	3	C	837	nothing
5/3/2010	3	95	3	C	837	.
5/3/2010	3	7	1	CG	470	It's ok. Not too strong or weak. It has a nice taste.

5/3/2010	3	43	1	CG	470	Tasted with a good beef flavor.
5/3/2010	3	44	1	CG	470	It was smooth flavor not pungent or strong
5/3/2010	3	48	1	CG	470	it was strong, can tell its good meat
5/3/2010	3	49	1	CG	470	it tastes like an average hamburger without seasonings
5/3/2010	3	50	1	CG	470	good flavor - no sour
5/3/2010	3	57	4	CG	470	.
5/3/2010	3	58	4	CG	470	strong flavor
5/3/2010	3	59	4	CG	470	nothing - no flavor
5/3/2010	3	60	4	CG	470	.
5/3/2010	3	61	4	CG	470	maintained an OK meat flavor throughout chewing it
5/3/2010	3	62	4	CG	470	ground beef flavor, wish there was a higher beef flavor
5/3/2010	3	67	4	CG	470	did not
5/3/2010	3	68	4	CG	470	not too strong
5/3/2010	3	69	4	CG	470	.
5/3/2010	3	70	4	CG	470	.
5/3/2010	3	71	4	CG	470	good beefy flavor
5/3/2010	3	72	4	CG	470	a slight nutty flavor
5/3/2010	3	73	3	CG	470	there wasn't much flavor
5/3/2010	3	74	3	CG	470	it takes to roasted beef
5/3/2010	3	75	3	CG	470	nothing in particular
5/3/2010	3	76	3	CG	470	.
5/3/2010	3	77	3	CG	470	good flavor despite weird texture
5/3/2010	3	78	3	CG	470	typically beef
5/3/2010	3	79	1	CG	470	beefy start
5/3/2010	3	80	1	CG	470	don't like anything
5/3/2010	3	81	1	CG	470	beefy
5/3/2010	3	82	4	CG	470	nothing
5/3/2010	3	83	4	CG	470	typical flavor
5/3/2010	3	84	4	CG	470	it is intense
5/3/2010	3	85	4	CG	470	juicy, rich
5/3/2010	3	86	4	CG	470	initial flavor is salty like normal ground beef
5/3/2010	3	87	4	CG	470	I could taste the beefy quantity in the meat - enough to like it without being overwhelmed

5/3/2010	3	88	3	CG	470	ok
5/3/2010	3	89	3	CG	470	.
5/3/2010	3	90	3	CG	470	n/a
5/3/2010	3	91	4	CG	470	tastes like meat
5/3/2010	3	93	4	CG	470	.
5/3/2010	3	94	4	CG	470	unsure, some char/grill taste
5/3/2010	3	95	4	CG	470	this sample tasted like a hamburger
4/19/2010	1	1	6	CG	477	not overwhelming flavor
4/19/2010	1	2	6	CG	477	I really just don't like this one at all
4/19/2010	1	3	6	CG	477	.
4/19/2010	1	4	6	CG	477	.
4/19/2010	1	5	6	CG	477	Not very flavorful at all.
4/19/2010	1	6	6	CG	477	great, not too bland
4/19/2010	1	8	6	CG	477	tastes pretty good
4/19/2010	1	9	6	CG	477	there was a little flavor, but not much
4/19/2010	1	10	6	CG	477	very good, flavorful
4/19/2010	1	11	5	CG	477	it tasted smokey
4/19/2010	1	12	5	CG	477	was seasoned better than the previous two
4/19/2010	1	13	5	CG	477	.
4/19/2010	1	14	6	CG	477	couldn't really taste it
4/19/2010	1	15	6	CG	477	.
4/19/2010	1	16	6	CG	477	very small amount
4/19/2010	1	17	5	CG	477	is it still beef?
4/19/2010	1	18	6	CG	477	didn't taste like bland meat
4/19/2010	1	19	6	CG	477	little more
4/19/2010	1	20	6	CG	477	I didn't like the flavor
4/19/2010	1	21	1	CG	477	.
4/19/2010	1	22	1	CG	477	I really didn't taste a recognizable flavor
4/19/2010	1	23	1	CG	477	.
4/19/2010	1	31	5	CG	477	it just tasted good
4/19/2010	1	32	5	CG	477	wasn't bland, did not leave an aftertaste
4/19/2010	1	33	5	CG	477	tastes good, uniform throughout the bite and aftertaste
4/26/2010	2	24	6	CG	530	.

4/26/2010	2	25	6	CG	530	.
4/26/2010	2	26	1	CG	530	sample was warm and juicy and tasted great
4/26/2010	2	27	6	CG	530	what I am used to
4/26/2010	2	28	6	CG	530	.
4/26/2010	2	29	6	CG	530	nice and natural. Not too bland but not over the top
4/26/2010	2	30	6	CG	530	.
4/26/2010	2	34	1	CG	530	it wasn't overpowering?
4/26/2010	2	35	1	CG	530	not bad tasting somewhat bland
4/26/2010	2	36	6	CG	530	it didn't taste bad
4/26/2010	2	37	6	CG	530	very consistent
4/26/2010	2	38	6	CG	530	very great. Nice bold flavor
4/26/2010	2	39	6	CG	530	not intense
4/26/2010	2	40	6	CG	530	not bland, had good flavor
4/26/2010	2	41	6	CG	530	none
4/26/2010	2	42	6	CG	530	somewhat intense flavor
4/26/2010	2	45	6	CG	530	bland
4/26/2010	2	46	6	CG	530	nothing
4/26/2010	2	47	6	CG	530	salt content
4/26/2010	2	51	1	CG	530	thought it tasted like normal beef
4/26/2010	2	52	1	CG	530	juicy
4/26/2010	2	53	1	CG	530	very tender and juicy
4/26/2010	2	54	6	CG	530	it began with a beef taste
4/26/2010	2	55	6	CG	530	just a hint of it there
4/26/2010	2	56	6	CG	530	typical and good
4/26/2010	2	63	1	CG	530	it reminded me of breakfast
4/26/2010	2	64	1	CG	530	tasted pretty normal
4/26/2010	2	65	1	CG	530	no flavor
4/26/2010	2	66	1	CG	530	meat was very moist, the browning on the inside helped increase sensory perception
4/19/2010	1	1	1	Ch	139	tasted like normal ground beef
4/19/2010	1	2	1	Ch	139	I like how you can taste the beef and it doesn't taste like fat.
4/19/2010	1	3	1	Ch	139	texture

4/19/2010	1	4	1	Ch	139	not a whole lot
4/19/2010	1	5	1	Ch	139	.
4/19/2010	1	6	1	Ch	139	Tasted really close to regular ground beef.
4/19/2010	1	8	3	Ch	139	it tastes like meat
4/19/2010	1	9	3	Ch	139	good flavor, tastes like the fat content is higher
4/19/2010	1	10	3	Ch	139	it was tasty, I like it
4/19/2010	1	11	1	Ch	139	tasted like regular meat
4/19/2010	1	12	1	Ch	139	it wasn't gross
4/19/2010	1	13	1	Ch	139	tender and juicy
4/19/2010	1	14	3	Ch	139	tasted normal
4/19/2010	1	15	3	Ch	139	nothing
4/19/2010	1	16	3	Ch	139	no flavor
4/19/2010	1	17	1	Ch	139	strong beef flavor
4/19/2010	1	18	3	Ch	139	it has a little flavor (added spices)
4/19/2010	1	19	3	Ch	139	there is more flavor in this one
4/19/2010	1	20	3	Ch	139	it resembles normal unseasoned ground beef
4/19/2010	1	21	3	Ch	139	can taste the flavor better, and tastes more like meat
4/19/2010	1	22	3	Ch	139	kind of bland but good overall
4/19/2010	1	23	3	Ch	139	.
4/19/2010	1	31	1	Ch	139	it didn't taste bad
4/19/2010	1	32	1	Ch	139	did not taste bad by any means
4/19/2010	1	33	1	Ch	139	not overwhelming good after flavor
5/3/2010	3	7	4	Ch	640	Really good. Not too strong but it keeps a good flavor in your mouth.
5/3/2010	3	43	4	Ch	640	Seems like the natural flavor is enhanced
5/3/2010	3	44	4	Ch	640	it was smooth.
5/3/2010	3	48	4	Ch	640	very good, not too strong
5/3/2010	3	49	4	Ch	640	nothing
5/3/2010	3	50	4	Ch	640	almost sweet :)
5/3/2010	3	57	2	Ch	640	.
5/3/2010	3	58	2	Ch	640	.
5/3/2010	3	59	2	Ch	640	nothing
5/3/2010	3	60	2	Ch	640	n/a

5/3/2010	3	61	2	Ch	640	tastes good at first with bold flavor
5/3/2010	3	62	2	Ch	640	small amount of beef flavor
5/3/2010	3	67	2	Ch	640	good smokey flavor
5/3/2010	3	68	2	Ch	640	not so fond of this flavor, doesn't seem like it would be as good as a burger as previous one
5/3/2010	3	69	2	Ch	640	good beef flavor, no off notes, nice browned flavor
5/3/2010	3	70	2	Ch	640	average - nothing out of the ordinary. Maybe a partial nut flavor
5/3/2010	3	71	2	Ch	640	very beefy, almost charred or grilled flavor
5/3/2010	3	72	2	Ch	640	very little flavor
5/3/2010	3	73	5	Ch	640	there wasn't much
5/3/2010	3	74	5	Ch	640	good taste to beef
5/3/2010	3	75	5	Ch	640	tasted a bit smokey
5/3/2010	3	76	5	Ch	640	beefy
5/3/2010	3	77	5	Ch	640	what flavor?
5/3/2010	3	78	5	Ch	640	beefy
5/3/2010	3	79	4	Ch	640	.
5/3/2010	3	80	4	Ch	640	.
5/3/2010	3	81	4	Ch	640	beefy
5/3/2010	3	82	2	Ch	640	.
5/3/2010	3	83	2	Ch	640	strong beef flavor/carmalized notes
5/3/2010	3	84	2	Ch	640	.
5/3/2010	3	85	2	Ch	640	tasted like beef
5/3/2010	3	86	2	Ch	640	.
5/3/2010	3	87	2	Ch	640	for being cooked plain, without seasoning, this meat has a lot of taste and flavor
5/3/2010	3	88	5	Ch	640	it's very subtle not overwhelming
5/3/2010	3	89	5	Ch	640	hot
5/3/2010	3	90	5	Ch	640	strong
5/3/2010	3	91	2	Ch	640	.
5/3/2010	3	93	2	Ch	640	.
5/3/2010	3	94	2	Ch	640	unsure, some char/grill taste
5/3/2010	3	95	2	Ch	640	.
4/26/2010	2	24	2	Ch	867	meat flavor

4/26/2010	2	25	2	Ch	867	it tasts like a beef fajita; you can not taste greasy or fat.
4/26/2010	2	26	3	Ch	867	somewhat intense flavor
4/26/2010	2	27	1	Ch	867	moderately juicy
4/26/2010	2	28	1	Ch	867	.
4/26/2010	2	29	1	Ch	867	.
4/26/2010	2	30	2	Ch	867	not overwhelming
4/26/2010	2	34	3	Ch	867	there was a definite flavor to it not just bland
4/26/2010	2	35	3	Ch	867	it was neither bland nor tasteful
4/26/2010	2	36	3	Ch	867	tasted okay
4/26/2010	2	37	3	Ch	867	solid beef flavor
4/26/2010	2	38	3	Ch	867	very distinct, not bland
4/26/2010	2	39	1	Ch	867	The flavor was intense but soft at the same time, wasn't overwhelming.
4/26/2010	2	40	1	Ch	867	good texture, nice flavor
4/26/2010	2	41	1	Ch	867	it tasted like decent ground beef
4/26/2010	2	42	1	Ch	867	consistent
4/26/2010	2	45	2	Ch	867	.
4/26/2010	2	46	2	Ch	867	good, juicy, solid flavor, even with no seasoning it has good flavor
4/26/2010	2	47	2	Ch	867	salt content
4/26/2010	2	51	3	Ch	867	it was warm?
4/26/2010	2	52	3	Ch	867	none
4/26/2010	2	53	3	Ch	867	way too greasy (juicy)
4/26/2010	2	54	3	Ch	867	it tasted good
4/26/2010	2	55	3	Ch	867	not too much flavor to overwhelm you
4/26/2010	2	56	3	Ch	867	tasted like what I would expect from ground beef
4/26/2010	2	63	3	Ch	867	It was very normal and not too bland, not too intense
4/26/2010	2	64	3	Ch	867	good flavor, not to meaty tasting
4/26/2010	2	65	3	Ch	867	meaty, nice, whole
4/26/2010	2	66	3	Ch	867	very juicy
5/3/2010	3	7	2	RM	157	not much of an aftertaste. It was good.
5/3/2010	3	43	2	RM	157	.
5/3/2010	3	44	2	RM	157	it was juicier

5/3/2010	3	48	2	RM	157	strong flavor
5/3/2010	3	49	2	RM	157	nothing
5/3/2010	3	50	2	RM	157	.
5/3/2010	3	57	6	RM	157	.
5/3/2010	3	58	6	RM	157	n/a
5/3/2010	3	59	6	RM	157	interesting
5/3/2010	3	60	6	RM	157	very unique - kinda sweet
5/3/2010	3	61	6	RM	157	strong flavor that maintained itself throughout chewing
5/3/2010	3	62	6	RM	157	decent beef flavor
5/3/2010	3	67	1	RM	157	tasted like eating a steak medium rare
5/3/2010	3	68	1	RM	157	can imagine it in a burger, seems like it would be good
5/3/2010	3	69	1	RM	157	good beef flavor
5/3/2010	3	70	1	RM	157	had a richer/deeper flavor
5/3/2010	3	71	1	RM	157	balance of lean and fat flavors
5/3/2010	3	72	1	RM	157	very beefy in flavor
5/3/2010	3	73	4	RM	157	nothing
5/3/2010	3	74	4	RM	157	.
5/3/2010	3	75	4	RM	157	it wasn't bland
5/3/2010	3	76	4	RM	157	.
5/3/2010	3	77	4	RM	157	unusual but good
5/3/2010	3	78	4	RM	157	beef
5/3/2010	3	79	2	RM	157	.
5/3/2010	3	80	2	RM	157	.
5/3/2010	3	81	2	RM	157	.
5/3/2010	3	82	6	RM	157	nothing
5/3/2010	3	83	6	RM	157	n/a
5/3/2010	3	84	6	RM	157	.
5/3/2010	3	85	1	RM	157	decent even with out seasoning
5/3/2010	3	86	1	RM	157	nothing
5/3/2010	3	87	1	RM	157	I like that it tastes natural. It seems to have a very organic feel to it which I like.
5/3/2010	3	88	4	RM	157	nothing
5/3/2010	3	89	4	RM	157	.

5/3/2010	3	90	4	RM	157	good
5/3/2010	3	91	1	RM	157	I liked that it was not too juicy and it had a great "meat" taste
5/3/2010	3	93	6	RM	157	.
5/3/2010	3	94	6	RM	157	nothing
5/3/2010	3	95	6	RM	157	.
4/26/2010	2	24	4	RM	335	less salty than the others
4/26/2010	2	25	4	RM	335	it tastes like it's bad for you (always a good thing)
4/26/2010	2	26	6	RM	335	great burger like flavor
4/26/2010	2	27	2	RM	335	not very much
4/26/2010	2	28	2	RM	335	similar with commercial burgers
4/26/2010	2	29	2	RM	335	did not like at all
4/26/2010	2	30	4	RM	335	.
4/26/2010	2	34	6	RM	335	it wasn't bad
4/26/2010	2	35	6	RM	335	flavorful
4/26/2010	2	36	5	RM	335	I didn't like it
4/26/2010	2	37	5	RM	335	much "lighter" flavor
4/26/2010	2	38	5	RM	335	bold flavor taste from even just first bite
4/26/2010	2	39	2	RM	335	.
4/26/2010	2	40	2	RM	335	.
4/26/2010	2	41	2	RM	335	not much
4/26/2010	2	42	2	RM	335	strong/consistent
4/26/2010	2	45	4	RM	335	.
4/26/2010	2	46	4	RM	335	.
4/26/2010	2	47	4	RM	335	nothing
4/26/2010	2	51	6	RM	335	didn't like anything except it was soft
4/26/2010	2	52	6	RM	335	tasted like ground meat
4/26/2010	2	53	6	RM	335	good
4/26/2010	2	54	5	RM	335	it had a strong flavor and tasted seasoned
4/26/2010	2	55	5	RM	335	not very much flavor at all
4/26/2010	2	56	5	RM	335	its intensity
4/26/2010	2	63	6	RM	335	nothing
4/26/2010	2	64	6	RM	335	kind of salty
4/26/2010	2	65	6	RM	335	n/a

4/26/2010	2	66	6	RM	335	juicy	
4/19/2010	1	1	2	RM	960	.	
4/19/2010	1	2	2	RM	960	.	
4/19/2010	1	3	2	RM	960	.	
4/19/2010	1	4	2	RM	960	better than previous sample. Had more flavor	
4/19/2010	1	5	2	RM	960	.	
4/19/2010	1	6	2	RM	960	n/a	
4/19/2010	1	8	5	RM	960	taste like meat	
4/19/2010	1	9	5	RM	960	I like the intensity of the flavor, wish it were a better flavor	
4/19/2010	1	10	5	RM	960		0
4/19/2010	1	11	4	RM	960	nothing	
4/19/2010	1	12	4	RM	960	it was not bland, it was a unique taste	
4/19/2010	1	13	4	RM	960	strong flavor, very tender	
4/19/2010	1	14	5	RM	960	bland	
4/19/2010	1	15	5	RM	960	.	
4/19/2010	1	16	5	RM	960	no flavor	
4/19/2010	1	17	4	RM	960	beef flavor though not strong	
4/19/2010	1	18	5	RM	960	it's okay, not impressive, probably the intensity of it	
4/19/2010	1	19	5	RM	960	better	
4/19/2010	1	20	5	RM	960	it tastes kind of lighter because it's not very intense	
4/19/2010	1	21	6	RM	960	.	
4/19/2010	1	22	6	RM	960	great! Liked the taste	
4/19/2010	1	23	6	RM	960	.	
4/19/2010	1	31	4	RM	960	not really anything	
4/19/2010	1	32	4	RM	960	nothing	
4/19/2010	1	33	4	RM	960	very good flavor, great balance	

CONSUMER COMMENTS Q5

Date	B	P	Ord	Trt	Code	Q5
5/3/2010	3	7	5	BB	351	Bloody aftertaste. Could have not been cooked all the way. It's a little weak on taste.
5/3/2010	3	43	5	BB	351	not a good "beef" flavor
5/3/2010	3	44	5	BB	351	none
5/3/2010	3	48	5	BB	351	n/a
5/3/2010	3	49	5	BB	351	wasn't a strong flavor
5/3/2010	3	50	5	BB	351	the smell it gave off wasn't great
5/3/2010	3	57	5	BB	351	.
5/3/2010	3	58	5	BB	351	.
5/3/2010	3	59	5	BB	351	bloody, metallic taste
5/3/2010	3	60	5	BB	351	.
5/3/2010	3	61	5	BB	351	plain, average taste of meat sample
5/3/2010	3	62	5	BB	351	nothing
5/3/2010	3	67	6	BB	351	can't really complain
5/3/2010	3	68	6	BB	351	too strong
5/3/2010	3	69	6	BB	351	off, bad aftertaste
5/3/2010	3	70	6	BB	351	.
5/3/2010	3	71	6	BB	351	.
5/3/2010	3	72	6	BB	351	.
5/3/2010	3	73	6	BB	351	there wasn't much
5/3/2010	3	74	6	BB	351	nothing
5/3/2010	3	75	6	BB	351	not much of a flavor
5/3/2010	3	76	6	BB	351	.
5/3/2010	3	77	6	BB	351	not much of a beefy flavor
5/3/2010	3	78	6	BB	351	nothing
5/3/2010	3	79	5	BB	351	continued off flavor
5/3/2010	3	80	5	BB	351	it's too intense, like raw meat, not well cooked meat
5/3/2010	3	81	5	BB	351	metallic/bland
5/3/2010	3	82	5	BB	351	it did not have a good taste
5/3/2010	3	83	5	BB	351	n/a

5/3/2010	3	84	5	BB	351	.
5/3/2010	3	85	6	BB	351	nothing stands out
5/3/2010	3	86	6	BB	351	everything. Flavor was not evident until end, which was metallic tasting
5/3/2010	3	87	6	BB	351	it was on the oily side
5/3/2010	3	88	6	BB	351	.
5/3/2010	3	89	6	BB	351	.
5/3/2010	3	90	6	BB	351	n/a
5/3/2010	3	91	6	BB	351	too dry and not a ton of flavor
5/3/2010	3	93	5	BB	351	.
5/3/2010	3	94	5	BB	351	not very beefy tasting
5/3/2010	3	95	5	BB	351	did not like.
4/19/2010	1	1	5	BB	384	.
4/19/2010	1	2	5	BB	384	it doesn't taste like much.
4/19/2010	1	3	5	BB	384	.
4/19/2010	1	4	5	BB	384	good but wasn't intense or strong pretty subtle
4/19/2010	1	5	5	BB	384	.
4/19/2010	1	6	5	BB	384	could be more, but bad aftertaste
4/19/2010	1	8	4	BB	384	bland
4/19/2010	1	9	4	BB	384	would like more flavor, still somewhat bland
4/19/2010	1	10	4	BB	384	thought it tasted weird, zero flavor, dull
4/19/2010	1	11	2	BB	384	nothing
4/19/2010	1	12	2	BB	384	was very bland, weak seasoning, left a bad taste in my mouth
4/19/2010	1	13	2	BB	384	n/a
4/19/2010	1	14	4	BB	384	couldn't taste flavor
4/19/2010	1	15	4	BB	384	.
4/19/2010	1	16	4	BB	384	not strong enough
4/19/2010	1	17	2	BB	384	oily flavor, bloody flavor
4/19/2010	1	18	4	BB	384	it tastes like bland meat
4/19/2010	1	19	4	BB	384	.
4/19/2010	1	20	4	BB	384	could probably be a bit more intense
4/19/2010	1	21	5	BB	384	very little flavor
4/19/2010	1	22	5	BB	384	little sour but pretty good

4/19/2010	1	23	5	BB	384	.
4/19/2010	1	31	2	BB	384	I'm not sure, it just seemed "off"
4/19/2010	1	32	2	BB	384	bland, salty, bad aftertaste
4/19/2010	1	33	2	BB	384	the smokey-ness is the only flavor of the meat
4/26/2010	2	24	1	BB	413	nothing
4/26/2010	2	25	1	BB	413	.
4/26/2010	2	26	5	BB	413	.
4/26/2010	2	27	5	BB	413	needs more
4/26/2010	2	28	5	BB	413	.
4/26/2010	2	29	5	BB	413	had no taste whatsoever
4/26/2010	2	30	1	BB	413	nothing really
4/26/2010	2	34	5	BB	413	.
4/26/2010	2	35	5	BB	413	bland, greasy
4/26/2010	2	36	4	BB	413	didn't have much of a flavor
4/26/2010	2	37	4	BB	413	very bland
4/26/2010	2	38	4	BB	413	.
4/26/2010	2	39	5	BB	413	off flavor, biting taste
4/26/2010	2	40	5	BB	413	.
4/26/2010	2	41	5	BB	413	none
4/26/2010	2	42	5	BB	413	nothing
4/26/2010	2	45	1	BB	413	still has a meaty flavor
4/26/2010	2	46	1	BB	413	.
4/26/2010	2	47	1	BB	413	a little bland
4/26/2010	2	51	5	BB	413	I didn't like the flavor
4/26/2010	2	52	5	BB	413	bland
4/26/2010	2	53	5	BB	413	.
4/26/2010	2	54	4	BB	413	the meat had an off-taste
4/26/2010	2	55	4	BB	413	not enough
4/26/2010	2	56	4	BB	413	.
4/26/2010	2	63	5	BB	413	my teeth stuck together a tiny bit. Not too much tough
4/26/2010	2	64	5	BB	413	very bland
4/26/2010	2	65	5	BB	413	n/a
4/26/2010	2	66	5	BB	413	nothing

4/26/2010	2	24	5	BTS	276	nothing
4/26/2010	2	25	5	BTS	276	it tastes like plain brown meat, while the others had a "different" flavor
4/26/2010	2	26	4	BTS	276	somewhat greasy
4/26/2010	2	27	4	BTS	276	n/a
4/26/2010	2	28	4	BTS	276	not much flavor
4/26/2010	2	29	4	BTS	276	bland
4/26/2010	2	30	5	BTS	276	.
4/26/2010	2	34	4	BTS	276	.
4/26/2010	2	35	4	BTS	276	more on the bland side
4/26/2010	2	36	1	BTS	276	I didn't have a problem
4/26/2010	2	37	1	BTS	276	slightly chewy
4/26/2010	2	38	1	BTS	276	maybe could add more texture, almost too chewy
4/26/2010	2	39	4	BTS	276	.
4/26/2010	2	40	4	BTS	276	n/a
4/26/2010	2	41	4	BTS	276	just very bland
4/26/2010	2	42	4	BTS	276	.
4/26/2010	2	45	5	BTS	276	greasy
4/26/2010	2	46	5	BTS	276	.
4/26/2010	2	47	5	BTS	276	nothing
4/26/2010	2	51	4	BTS	276	aftertaste and during
4/26/2010	2	52	4	BTS	276	bland
4/26/2010	2	53	4	BTS	276	.
4/26/2010	2	54	1	BTS	276	it was not a strong flavor
4/26/2010	2	55	1	BTS	276	a little too bland for my liking
4/26/2010	2	56	1	BTS	276	.
4/26/2010	2	63	4	BTS	276	pretty bland, not much flavor
4/26/2010	2	64	4	BTS	276	.
4/26/2010	2	65	4	BTS	276	metalic flavor stands out
4/26/2010	2	66	4	BTS	276	nothing
5/3/2010	3	7	6	BTS	850	nothing
5/3/2010	3	43	6	BTS	850	.

5/3/2010	3	44	6	BTS	850	it was somewhat dry
5/3/2010	3	48	6	BTS	850	n/a
5/3/2010	3	49	6	BTS	850	it was edible, but not a lot more than that
5/3/2010	3	50	6	BTS	850	.
5/3/2010	3	57	1	BTS	850	.
5/3/2010	3	58	1	BTS	850	overall not bad maybe a little bland
5/3/2010	3	59	1	BTS	850	almost bland
5/3/2010	3	60	1	BTS	850	n/a
5/3/2010	3	61	1	BTS	850	nothing
5/3/2010	3	62	1	BTS	850	the consistency is a little off.
5/3/2010	3	67	3	BTS	850	nothing
5/3/2010	3	68	3	BTS	850	hard to imagine if it'd be good with seasoning
5/3/2010	3	69	3	BTS	850	a little sour
5/3/2010	3	70	3	BTS	850	.
5/3/2010	3	71	3	BTS	850	not enough beef flavor
5/3/2010	3	72	3	BTS	850	I detected a sour flavor in the meat
5/3/2010	3	73	2	BTS	850	there wasn't much
5/3/2010	3	74	2	BTS	850	it is plain
5/3/2010	3	75	2	BTS	850	nothing
5/3/2010	3	76	2	BTS	850	.
5/3/2010	3	77	2	BTS	850	not extremely beefy
5/3/2010	3	78	2	BTS	850	nothing
5/3/2010	3	79	6	BTS	850	tastes like owens country sausage for a second sage?
5/3/2010	3	80	6	BTS	850	.
5/3/2010	3	81	6	BTS	850	metallic
5/3/2010	3	82	1	BTS	850	I enjoyed tasting it, therefore I had no dislikes
5/3/2010	3	83	1	BTS	850	.
5/3/2010	3	84	1	BTS	850	is not intense
5/3/2010	3	85	3	BTS	850	kinda blah, not rich
5/3/2010	3	86	3	BTS	850	tasted like eating dirt and metallic taste left in mouth
5/3/2010	3	87	3	BTS	850	no flavor, very bland and plain
5/3/2010	3	88	2	BTS	850	not enough flavor
5/3/2010	3	89	2	BTS	850	.

5/3/2010	3	90	2	BTS	850	off, bad aftertaste
5/3/2010	3	91	3	BTS	850	.
5/3/2010	3	93	1	BTS	850	.
5/3/2010	3	94	1	BTS	850	somewhat bland
5/3/2010	3	95	1	BTS	850	.
4/19/2010	1	1	4	BTS	977	.
4/19/2010	1	2	4	BTS	977	It almost doesn't taste like anything.
4/19/2010	1	3	4	BTS	977	not too strong, too much fat
4/19/2010	1	4	4	BTS	977	still not overly flavorful
4/19/2010	1	5	4	BTS	977	It doesn't have much flavor at all.
4/19/2010	1	6	4	BTS	977	could have been more
4/19/2010	1	8	1	BTS	977	it's bland, tasteless
4/19/2010	1	9	1	BTS	977	hardly any flavor at all
4/19/2010	1	10	1	BTS	977	nothing
4/19/2010	1	11	3	BTS	977	tasts odd like plastic
4/19/2010	1	12	3	BTS	977	bland, not much of a taste
4/19/2010	1	13	3	BTS	977	n/a
4/19/2010	1	14	1	BTS	977	couldn't taste flavor
4/19/2010	1	15	1	BTS	977	it was very bland
4/19/2010	1	16	1	BTS	977	there was not enough flavor
4/19/2010	1	17	3	BTS	977	beef flavor not strong enough, but something else's flavor too much
4/19/2010	1	18	1	BTS	977	bland meat, no flavor, add at least some salt
4/19/2010	1	19	1	BTS	977	there's not any flavor
4/19/2010	1	20	1	BTS	977	it could border on bland
4/19/2010	1	21	4	BTS	977	still kind of bland
4/19/2010	1	22	4	BTS	977	not that flavorful, yet tasty
4/19/2010	1	23	4	BTS	977	.
4/19/2010	1	31	3	BTS	977	not really anything
4/19/2010	1	32	3	BTS	977	it was like chewing water
4/19/2010	1	33	3	BTS	977	could be more intense
4/19/2010	1	1	3	C	501	.
4/19/2010	1	2	3	C	501	It does taste a little fat, perserve like.

4/19/2010	1	3	3	C	501	.
4/19/2010	1	4	3	C	501	pretty bland
4/19/2010	1	5	3	C	501	Testes kind of bland. I would need some salt and pepper
4/19/2010	1	6	3	C	501	not really any flavor tasted
4/19/2010	1	8	2	C	501	no flavor, bland
4/19/2010	1	9	2	C	501	not enough flavor
4/19/2010	1	10	2	C	501	kind of dull, not really flavorful
4/19/2010	1	11	6	C	501	nothing
4/19/2010	1	12	6	C	501	plain, good when first bitten into, but then doesn't taste good after chewing
4/19/2010	1	13	6	C	501	.
4/19/2010	1	14	2	C	501	couldn't really tell
4/19/2010	1	15	2	C	501	.
4/19/2010	1	16	2	C	501	not enough flavor
4/19/2010	1	17	6	C	501	a little bit of bloody flavor
4/19/2010	1	18	2	C	501	it was okay, would appreciate some spice in it
4/19/2010	1	19	2	C	501	not any
4/19/2010	1	20	2	C	501	it almost tastes more like turkey
4/19/2010	1	21	2	C	501	not very intense
4/19/2010	1	22	2	C	501	ended up a little sour for my liking
4/19/2010	1	23	2	C	501	.
4/19/2010	1	31	6	C	501	it was pretty bland
4/19/2010	1	32	6	C	501	a little bland
4/19/2010	1	33	6	C	501	bland
4/26/2010	2	24	3	C	646	wasn't overly flavorful
4/26/2010	2	25	3	C	646	.
4/26/2010	2	26	2	C	646	there wasn't as much flavor in this sample
4/26/2010	2	27	3	C	646	slightly dry
4/26/2010	2	28	3	C	646	not as strong as commercial one
4/26/2010	2	29	3	C	646	.
4/26/2010	2	30	3	C	646	not enough
4/26/2010	2	34	2	C	646	I didn't really taste it
4/26/2010	2	35	2	C	646	it was bland and untasty

4/26/2010	2	36	2	C	646	needs a little something
4/26/2010	2	37	2	C	646	not really typical of ground beef
4/26/2010	2	38	2	C	646	did not like it at all, bland
4/26/2010	2	39	3	C	646	iron aftertaste
4/26/2010	2	40	3	C	646	.
4/26/2010	2	41	3	C	646	none
4/26/2010	2	42	3	C	646	nothing
4/26/2010	2	45	3	C	646	.
4/26/2010	2	46	3	C	646	bland but juicy
4/26/2010	2	47	3	C	646	very bland
4/26/2010	2	51	2	C	646	gave a weird aftertaste
4/26/2010	2	52	2	C	646	tasted raw
4/26/2010	2	53	2	C	646	.
4/26/2010	2	54	2	C	646	it was too chewy to enjoy all of flavor
4/26/2010	2	55	2	C	646	nothing
4/26/2010	2	56	2	C	646	just doesn't taste "right"
4/26/2010	2	63	2	C	646	it reminded me of an animal too much. Not a good aftertaste
4/26/2010	2	64	2	C	646	wasn't a lot of flavor
4/26/2010	2	65	2	C	646	nothing
4/26/2010	2	66	2	C	646	it had a strange aftertaste
5/3/2010	3	7	3	C	837	Had a hit of a bloody taste. Could not been cook well done.
5/3/2010	3	43	3	C	837	.
5/3/2010	3	44	3	C	837	none
5/3/2010	3	48	3	C	837	nothing special
5/3/2010	3	49	3	C	837	it tasted like an old, reheated patty
5/3/2010	3	50	3	C	837	almost too much like card board
5/3/2010	3	57	3	C	837	very strong, not very good
5/3/2010	3	58	3	C	837	did not like the taste
5/3/2010	3	59	3	C	837	n/a
5/3/2010	3	60	3	C	837	it left a metal taste in my mouth
5/3/2010	3	61	3	C	837	after chewing (2-4 seconds) the sample tasted worn out and had a pungent odor taste
5/3/2010	3	62	3	C	837	too much fat taste. Fat = flavor I guess

5/3/2010	3	67	5	C	837	metallic taste
5/3/2010	3	68	5	C	837	I've never liked this kind of flavor, don't like the aftertaste
5/3/2010	3	69	5	C	837	rancid flavor
5/3/2010	3	70	5	C	837	weird aftertaste. Kind of sticks to the teeth when you chew
5/3/2010	3	71	5	C	837	very bland warmed over flavor
5/3/2010	3	72	5	C	837	has a cardboard wood taste
5/3/2010	3	73	1	C	837	not any flavor
5/3/2010	3	74	1	C	837	the oily flavor
5/3/2010	3	75	1	C	837	nothing
5/3/2010	3	76	1	C	837	.
5/3/2010	3	77	1	C	837	kind of odd aftertaste. unusual texture but not bad
5/3/2010	3	78	1	C	837	nothing
5/3/2010	3	79	3	C	837	.
5/3/2010	3	80	3	C	837	it's greasy similar to fat flavor
5/3/2010	3	81	3	C	837	bland, not flavorful
5/3/2010	3	82	3	C	837	it was not very tasteful
5/3/2010	3	83	3	C	837	cooked beef bland
5/3/2010	3	84	3	C	837	.
5/3/2010	3	85	5	C	837	nothing really stands out
5/3/2010	3	86	5	C	837	nothing
5/3/2010	3	87	5	C	837	it was horribly bland and very plain
5/3/2010	3	88	1	C	837	the fatty/muscle in the patty
5/3/2010	3	89	1	C	837	the flavor was off and had a weird aftertaste
5/3/2010	3	90	1	C	837	n/a
5/3/2010	3	91	5	C	837	.
5/3/2010	3	93	3	C	837	weird
5/3/2010	3	94	3	C	837	weird, cardboard-ish
5/3/2010	3	95	3	C	837	.
5/3/2010	3	7	1	CG	470	it left an aftertaste. The taste is like a bloody aftertaste.
5/3/2010	3	43	1	CG	470	.
5/3/2010	3	44	1	CG	470	not very juicy
5/3/2010	3	48	1	CG	470	n/a

5/3/2010	3	49	1	CG	470	kind of bland but flavor is still there
5/3/2010	3	50	1	CG	470	some rougher pieces
5/3/2010	3	57	4	CG	470	im not sure but it wasn't good
5/3/2010	3	58	4	CG	470	.
5/3/2010	3	59	4	CG	470	no flavor
5/3/2010	3	60	4	CG	470	I couldn't really taste flavor
5/3/2010	3	61	4	CG	470	tasted like a basic meat flavor, not great and not bad, just ok…not a standout top note of the meat
5/3/2010	3	62	4	CG	470	not enough beef flavor, half is just like chewing nothing
5/3/2010	3	67	4	CG	470	it smelled
5/3/2010	3	68	4	CG	470	bland, not flavorful
5/3/2010	3	69	4	CG	470	bloody taste
5/3/2010	3	70	4	CG	470	nothing special
5/3/2010	3	71	4	CG	470	almost a "burn" after taste
5/3/2010	3	72	4	CG	470	.
5/3/2010	3	73	3	CG	470	there wasn't much flavor
5/3/2010	3	74	3	CG	470	the fat flavor of it
5/3/2010	3	75	3	CG	470	not much flavor
5/3/2010	3	76	3	CG	470	pretty bland
5/3/2010	3	77	3	CG	470	.
5/3/2010	3	78	3	CG	470	nothing
5/3/2010	3	79	1	CG	470	something like an over cooked egg flavor at end
5/3/2010	3	80	1	CG	470	it's bloody, tough
5/3/2010	3	81	1	CG	470	.
5/3/2010	3	82	4	CG	470	everything
5/3/2010	3	83	4	CG	470	n/a
5/3/2010	3	84	4	CG	470	.
5/3/2010	3	85	4	CG	470	needs more salt ;)
5/3/2010	3	86	4	CG	470	leaves metallic taste in mouth
5/3/2010	3	87	4	CG	470	I disliked nothing about this flavor
5/3/2010	3	88	3	CG	470	needs salt and pepper
5/3/2010	3	89	3	CG	470	.
5/3/2010	3	90	3	CG	470	nasty

5/3/2010	3	91	4	CG	470	.	
5/3/2010	3	93	4	CG	470	metallic	
5/3/2010	3	94	4	CG	470	almost "cowy" or grassy" (at least smells a little like that)	
5/3/2010	3	95	4	CG	470	.	
4/19/2010	1	1	6	CG	477	.	
4/19/2010	1	2	6	CG	477	It doesn't taste like beef. It tastes of odd additive or something	
4/19/2010	1	3	6	CG	477	not flavor	
4/19/2010	1	4	6	CG	477	not overly flavor	
4/19/2010	1	5	6	CG	477	.	
4/19/2010	1	6	6	CG	477	might be a little much for some	
4/19/2010	1	8	6	CG	477	a little bland	
4/19/2010	1	9	6	CG	477	it had flavor, but not what I prefer.	
4/19/2010	1	10	6	CG	477		0
4/19/2010	1	11	5	CG	477	nothing	
4/19/2010	1	12	5	CG	477	still could have had a little more seasoning, a simple pepper or more pepper would have been good on this	
4/19/2010	1	13	5	CG	477	a little bland	
4/19/2010	1	14	6	CG	477	no flavor	
4/19/2010	1	15	6	CG	477	dull and not very tastefull	
4/19/2010	1	16	6	CG	477	not enough	
4/19/2010	1	17	5	CG	477	bloody	
4/19/2010	1	18	6	CG	477	right intensity and flavor	
4/19/2010	1	19	6	CG	477	.	
4/19/2010	1	20	6	CG	477	it was almost non existent	
4/19/2010	1	21	1	CG	477	not enough flavor	
4/19/2010	1	22	1	CG	477	it didn't really have a flavor I could taste	
4/19/2010	1	23	1	CG	477	.	
4/19/2010	1	31	5	CG	477	nothing	
4/19/2010	1	32	5	CG	477	flavor is good	
4/19/2010	1	33	5	CG	477	.	
4/26/2010	2	24	6	CG	530	nothing	
4/26/2010	2	25	6	CG	530	it just tastes strange, not like ground beef should taste	
4/26/2010	2	26	1	CG	530	.	

4/26/2010	2	27	6	CG	530	not enough
4/26/2010	2	28	6	CG	530	very different from commercial samples, not much flavor
4/26/2010	2	29	6	CG	530	.
4/26/2010	2	30	6	CG	530	.
4/26/2010	2	34	1	CG	530	it was very bland
4/26/2010	2	35	1	CG	530	not bad tasting somewhat bland
4/26/2010	2	36	6	CG	530	not much of a flavor, had a bad aftertaste
4/26/2010	2	37	6	CG	530	very strong flavor, too thick
4/26/2010	2	38	6	CG	530	.
4/26/2010	2	39	6	CG	530	.
4/26/2010	2	40	6	CG	530	.
4/26/2010	2	41	6	CG	530	very funny tasting. Not good
4/26/2010	2	42	6	CG	530	bland aftertaste
4/26/2010	2	45	6	CG	530	.
4/26/2010	2	46	6	CG	530	the structure of the meat contributed to my immediate dislike of the flavor
4/26/2010	2	47	6	CG	530	nothing
4/26/2010	2	51	1	CG	530	was a little bland and kind of rubbery texture
4/26/2010	2	52	1	CG	530	not much flavor
4/26/2010	2	53	1	CG	530	not very much taste
4/26/2010	2	54	6	CG	530	it had a distinct aftertaste that was not pleasant
4/26/2010	2	55	6	CG	530	could use more
4/26/2010	2	56	6	CG	530	not extremely intense
4/26/2010	2	63	1	CG	530	nothing, not enough of it
4/26/2010	2	64	1	CG	530	there wasn't that much flavor
4/26/2010	2	65	1	CG	530	bland
4/26/2010	2	66	1	CG	530	somewhat plain
4/19/2010	1	1	1	Ch	139	.
4/19/2010	1	2	1	Ch	139	a little more flavor, other than just the beefiness, would be nice, but really no complaints.
4/19/2010	1	3	1	Ch	139	not a lot of flavor
4/19/2010	1	4	1	Ch	139	pretty bland

4/19/2010	1	5	1	Ch	139	it had flavor but not a lot	
4/19/2010	1	6	1	Ch	139	Not much additive flavor.	
4/19/2010	1	8	3	Ch	139	it is a little bland	
4/19/2010	1	9	3	Ch	139	still not very intense	
4/19/2010	1	10	3	Ch	139		0
4/19/2010	1	11	1	Ch	139	nothing	
4/19/2010	1	12	1	Ch	139	wasn't seasoned as much as I would like	
4/19/2010	1	13	1	Ch	139	nothing	
4/19/2010	1	14	3	Ch	139	.	
4/19/2010	1	15	3	Ch	139	dull	
4/19/2010	1	16	3	Ch	139	not enough	
4/19/2010	1	17	1	Ch	139	not salty at all	
4/19/2010	1	18	3	Ch	139	it is not as intense as 501	
4/19/2010	1	19	3	Ch	139	.	
4/19/2010	1	20	3	Ch	139	it is a little bland	
4/19/2010	1	21	3	Ch	139	.	
4/19/2010	1	22	3	Ch	139	a little bland but decent	
4/19/2010	1	23	3	Ch	139	.	
4/19/2010	1	31	1	Ch	139	it was a little plain	
4/19/2010	1	32	1	Ch	139	a little bland	
4/19/2010	1	33	1	Ch	139	lacked a robustness, wasn't bland but was mid spectrum	
5/3/2010	3	7	4	Ch	640	nothing	
5/3/2010	3	43	4	Ch	640	.	
5/3/2010	3	44	4	Ch	640	not very strong.	
5/3/2010	3	48	4	Ch	640	n/a	
5/3/2010	3	49	4	Ch	640	horrible taste in mouth during and after eating	
5/3/2010	3	50	4	Ch	640	.	
5/3/2010	3	57	2	Ch	640	.	
5/3/2010	3	58	2	Ch	640	left a different aftertaste	
5/3/2010	3	59	2	Ch	640	not tasty	
5/3/2010	3	60	2	Ch	640	too simple, bland	
5/3/2010	3	61	2	Ch	640	unpleasant aftertaste	
5/3/2010	3	62	2	Ch	640	very bland in beef flavor	

5/3/2010	3	67	2	Ch	640	nothing
5/3/2010	3	68	2	Ch	640	two portions tasted a bit different
5/3/2010	3	69	2	Ch	640	.
5/3/2010	3	70	2	Ch	640	n/a
5/3/2010	3	71	2	Ch	640	.
5/3/2010	3	72	2	Ch	640	very bland not very juicy
5/3/2010	3	73	5	Ch	640	there wasn't much
5/3/2010	3	74	5	Ch	640	oily, a little bit of bitter
5/3/2010	3	75	5	Ch	640	nothing
5/3/2010	3	76	5	Ch	640	.
5/3/2010	3	77	5	Ch	640	barely tasted like anything
5/3/2010	3	78	5	Ch	640	nothing
5/3/2010	3	79	4	Ch	640	something tastes off kind of hard boiled eggs WOF
5/3/2010	3	80	4	Ch	640	it's smells like blood
5/3/2010	3	81	4	Ch	640	.
5/3/2010	3	82	2	Ch	640	it was a little dry.
5/3/2010	3	83	2	Ch	640	n/a
5/3/2010	3	84	2	Ch	640	this is like artificially flavored
5/3/2010	3	85	2	Ch	640	bland, not flavorful
5/3/2010	3	86	2	Ch	640	nothing
5/3/2010	3	87	2	Ch	640	it was kind of oily
5/3/2010	3	88	5	Ch	640	.
5/3/2010	3	89	5	Ch	640	.
5/3/2010	3	90	5	Ch	640	n/a
5/3/2010	3	91	2	Ch	640	not as much flavor
5/3/2010	3	93	2	Ch	640	bland
5/3/2010	3	94	2	Ch	640	no beefy flavor
5/3/2010	3	95	2	Ch	640	I did not think this sample had much flavor at all. After I chewed, it felt metallicy or something.
4/26/2010	2	24	2	Ch	867	could be stronger
4/26/2010	2	25	2	Ch	867	it may be a little too strong, but if so, not by much
4/26/2010	2	26	3	Ch	867	.
4/26/2010	2	27	1	Ch	867	dry

4/26/2010	2	28	1	Ch	867	raw taste, not much flavor
4/26/2010	2	29	1	Ch	867	kind of bland
4/26/2010	2	30	2	Ch	867	.
4/26/2010	2	34	3	Ch	867	could be a little more intense
4/26/2010	2	35	3	Ch	867	not bad tasting
4/26/2010	2	36	3	Ch	867	just had an off flavor
4/26/2010	2	37	3	Ch	867	a bit bland
4/26/2010	2	38	3	Ch	867	could have been a little stronger
4/26/2010	2	39	1	Ch	867	has an iron-y aftertaste
4/26/2010	2	40	1	Ch	867	nothing
4/26/2010	2	41	1	Ch	867	it just a tiny odd taste that I couldn't pin point
4/26/2010	2	42	1	Ch	867	a little bland
4/26/2010	2	45	2	Ch	867	lingering taste
4/26/2010	2	46	2	Ch	867	.
4/26/2010	2	47	2	Ch	867	a little bland
4/26/2010	2	51	3	Ch	867	I really didn't like this one at all. Bad.
4/26/2010	2	52	3	Ch	867	bland
4/26/2010	2	53	3	Ch	867	.
4/26/2010	2	54	3	Ch	867	flavor didn’t last long. It became plain
4/26/2010	2	55	3	Ch	867	could use a touch more
4/26/2010	2	56	3	Ch	867	.
4/26/2010	2	63	3	Ch	867	nothing
4/26/2010	2	64	3	Ch	867	.
4/26/2010	2	65	3	Ch	867	n/a
4/26/2010	2	66	3	Ch	867	nothing
5/3/2010	3	7	2	RM	157	does not stay in your mouth too long.
5/3/2010	3	43	2	RM	157	The normal beef flavor isn't there
5/3/2010	3	44	2	RM	157	it tasted different than normal ground beef
5/3/2010	3	48	2	RM	157	tastes too strong
5/3/2010	3	49	2	RM	157	very boring flavor - average burgers are much tastier
5/3/2010	3	50	2	RM	157	tastes like dogfood
5/3/2010	3	57	6	RM	157	tastes like dog food, not good

5/3/2010	3	58	6	RM	157	weird tasting
5/3/2010	3	59	6	RM	157	n/a smells like meatloaf
5/3/2010	3	60	6	RM	157	.
5/3/2010	3	61	6	RM	157	nothing
5/3/2010	3	62	6	RM	157	had a little liver taste to it
5/3/2010	3	67	1	RM	157	nothing really
5/3/2010	3	68	1	RM	157	not very strong.
5/3/2010	3	69	1	RM	157	fatty, little bit of off flavor - card board
5/3/2010	3	70	1	RM	157	has a tacky feel when you chew
5/3/2010	3	71	1	RM	157	.
5/3/2010	3	72	1	RM	157	nothing. I liked it
5/3/2010	3	73	4	RM	157	it was weird
5/3/2010	3	74	4	RM	157	it has a little sour flavor. Rancid maybe
5/3/2010	3	75	4	RM	157	I didn't like the taste. I can't pick out what the taste was.
5/3/2010	3	76	4	RM	157	too bland
5/3/2010	3	77	4	RM	157	not very beefy tasting
5/3/2010	3	78	4	RM	157	.
5/3/2010	3	79	2	RM	157	strange taste like oven cooked ground beef that is old
5/3/2010	3	80	2	RM	157	it tastes like raw meat
5/3/2010	3	81	2	RM	157	metallic
5/3/2010	3	82	6	RM	157	it was bland and untasty
5/3/2010	3	83	6	RM	157	burnt popcorn flavor
5/3/2010	3	84	6	RM	157	.
5/3/2010	3	85	1	RM	157	had a microwaved vibe
5/3/2010	3	86	1	RM	157	meat lacked richness of ground meat
5/3/2010	3	87	1	RM	157	there is a subtle atertaste that stays in your mouth. It's a very bland, almost unnatural taste.
5/3/2010	3	88	4	RM	157	flavor didn't agree with my palate
5/3/2010	3	89	4	RM	157	.
5/3/2010	3	90	4	RM	157	n/a
5/3/2010	3	91	1	RM	157	my lips felt waxy after I took a bite
5/3/2010	3	93	6	RM	157	aweful, freezer burned/WOF
5/3/2010	3	94	6	RM	157	eww.

5/3/2010	3	95	6	RM	157	was not good
4/26/2010	2	24	4	RM	335	nothing
4/26/2010	2	25	4	RM	335	it tasts a little more "fatty" than the others
4/26/2010	2	26	6	RM	335	.
4/26/2010	2	27	2	RM	335	too dry, tasted like powder
4/26/2010	2	28	2	RM	335	.
4/26/2010	2	29	2	RM	335	very bland
4/26/2010	2	30	4	RM	335	not very distinct
4/26/2010	2	34	6	RM	335	.
4/26/2010	2	35	6	RM	335	not enough flavor
4/26/2010	2	36	5	RM	335	just didn't taste good, I would chose to eat this
4/26/2010	2	37	5	RM	335	nothing
4/26/2010	2	38	5	RM	335	.
4/26/2010	2	39	2	RM	335	it tastes the way dog food smells
4/26/2010	2	40	2	RM	335	bland, slightly off taste
4/26/2010	2	41	2	RM	335	it was kind of potent and not very ground beef like
4/26/2010	2	42	2	RM	335	bland
4/26/2010	2	45	4	RM	335	bland
4/26/2010	2	46	4	RM	335	the whole thing
4/26/2010	2	47	4	RM	335	too intense
4/26/2010	2	51	6	RM	335	tasted weird and now my breath is going to smell bad
4/26/2010	2	52	6	RM	335	bland
4/26/2010	2	53	6	RM	335	.
4/26/2010	2	54	5	RM	335	I enjoyed the flavor, but it tasted more like roast beef than ground beef
4/26/2010	2	55	5	RM	335	not very much flavor at all
4/26/2010	2	56	5	RM	335	just didn’t taste like what I would want in ground beef
4/26/2010	2	63	6	RM	335	it tasted like a skunk smells
4/26/2010	2	64	6	RM	335	.
4/26/2010	2	65	6	RM	335	too intense
4/26/2010	2	66	6	RM	335	the flavor was off and had a weird aftertaste
4/19/2010	1	1	2	RM	960	had a fun initial taste - chemical type taste
4/19/2010	1	2	2	RM	960	this taste greasy and fatty.

4/19/2010	1	3	2	RM	960	not too strong
4/19/2010	1	4	2	RM	960	is not overwhelming flavorful
4/19/2010	1	5	2	RM	960	.
4/19/2010	1	6	2	RM	960	Couldn't tell what it was flavored with and didn't taste well at all
4/19/2010	1	8	5	RM	960	has a weird aftertaste
4/19/2010	1	9	5	RM	960	funny flavor, but can't really explain it.
4/19/2010	1	10	5	RM	960	tasted boring, 0 much flavor to it
4/19/2010	1	11	4	RM	960	tasted like cardboard smells
4/19/2010	1	12	4	RM	960	though it was a different flavor than I'm used to, something new, was not seasoned well
4/19/2010	1	13	4	RM	960	.
4/19/2010	1	14	5	RM	960	bland
4/19/2010	1	15	5	RM	960	was very different
4/19/2010	1	16	5	RM	960	everything
4/19/2010	1	17	4	RM	960	bloody though not like beef
4/19/2010	1	18	5	RM	960	bland
4/19/2010	1	19	5	RM	960	.
4/19/2010	1	20	5	RM	960	a little bland
4/19/2010	1	21	6	RM	960	very little flavor
4/19/2010	1	22	6	RM	960	little sour, but best by far of the others
4/19/2010	1	23	6	RM	960	.
4/19/2010	1	31	4	RM	960	it just didn't taste that good
4/19/2010	1	32	4	RM	960	bad after taste
4/19/2010	1	33	4	RM	960	.

CONSUMER COMMENTS Q9

Date	B	P	Ord	Trt	Code	Q9
5/3/2010	3	7	5	BB	351	Looks really good.
5/3/2010	3	43	5	BB	351	.
5/3/2010	3	44	5	BB	351	It was juicy and consistant
5/3/2010	3	48	5	BB	351	very tender, no grissle
5/3/2010	3	49	5	BB	351	it was tender which feels good while eating
5/3/2010	3	50	5	BB	351	it was smooth
5/3/2010	3	57	5	BB	351	.
5/3/2010	3	58	5	BB	351	.
5/3/2010	3	59	5	BB	351	nothing
5/3/2010	3	60	5	BB	351	I liked it, didn't leave sandy pieces in my mouth
5/3/2010	3	61	5	BB	351	less pink in meat sample
5/3/2010	3	62	5	BB	351	texture/consistency held together way
5/3/2010	3	67	6	BB	351	not bad fairly tender
5/3/2010	3	68	6	BB	351	normal, not odd
5/3/2010	3	69	6	BB	351	.
5/3/2010	3	70	6	BB	351	.
5/3/2010	3	71	6	BB	351	very tender no grissle
5/3/2010	3	72	6	BB	351	.
5/3/2010	3	73	6	BB	351	it was tender
5/3/2010	3	74	6	BB	351	it almost melts in the mouth
5/3/2010	3	75	6	BB	351	tender and juicy
5/3/2010	3	76	6	BB	351	.
5/3/2010	3	77	6	BB	351	.
5/3/2010	3	78	6	BB	351	tender
5/3/2010	3	79	5	BB	351	.
5/3/2010	3	80	5	BB	351	.
5/3/2010	3	81	5	BB	351	.
5/3/2010	3	82	5	BB	351	nothing
5/3/2010	3	83	5	BB	351	n/a
5/3/2010	3	84	5	BB	351	.

5/3/2010	3	85	6	BB	351	familiar - same as normal
5/3/2010	3	86	6	BB	351	nothing
5/3/2010	3	87	6	BB	351	it was how ground beef usually feels. It was very typical for everyday meat
5/3/2010	3	88	6	BB	351	very nice
5/3/2010	3	89	6	BB	351	.
5/3/2010	3	90	6	BB	351	good
5/3/2010	3	91	6	BB	351	.
5/3/2010	3	93	5	BB	351	.
5/3/2010	3	94	5	BB	351	decent particle size
5/3/2010	3	95	5	BB	351	.
4/19/2010	1	1	5	BB	384	.
4/19/2010	1	2	5	BB	384	It holds together without feeling stickier leaving a coating behind.
4/19/2010	1	3	5	BB	384	the way it was made is good
4/19/2010	1	4	5	BB	384	tender
4/19/2010	1	5	5	BB	384	.
4/19/2010	1	6	5	BB	384	extremely tender, good
4/19/2010	1	8	4	BB	384	good ground beef texture
4/19/2010	1	9	4	BB	384	very tender, melted in my mouth
4/19/2010	1	10	4	BB	384	normal, liked
4/19/2010	1	11	2	BB	384	juicy
4/19/2010	1	12	2	BB	384	good amount of chewiness to it
4/19/2010	1	13	2	BB	384	tenderness
4/19/2010	1	14	4	BB	384	soft
4/19/2010	1	15	4	BB	384	.
4/19/2010	1	16	4	BB	384	nice and moist
4/19/2010	1	17	2	BB	384	easy to bite, easy to chew
4/19/2010	1	18	4	BB	384	soft, particle definition
4/19/2010	1	19	4	BB	384	.
4/19/2010	1	20	4	BB	384	it's very ground beef like
4/19/2010	1	21	5	BB	384	.
4/19/2010	1	22	5	BB	384	moist, yet held its shape
4/19/2010	1	23	5	BB	384	.

4/19/2010	1	31	2	BB	384	seemed normal
4/19/2010	1	32	2	BB	384	wasn't too rough
4/19/2010	1	33	2	BB	384	stays together well
4/26/2010	2	24	1	BB	413	tender
4/26/2010	2	25	1	BB	413	it was not falling apart and not too chewy
4/26/2010	2	26	5	BB	413	easy to chew; melt in your mouth
4/26/2010	2	27	5	BB	413	good texture
4/26/2010	2	28	5	BB	413	very tender and juicy
4/26/2010	2	29	5	BB	413	very tender
4/26/2010	2	30	1	BB	413	overall great texture
4/26/2010	2	34	5	BB	413	.
4/26/2010	2	35	5	BB	413	do not like the texture
4/26/2010	2	36	4	BB	413	I didn't really like it
4/26/2010	2	37	4	BB	413	thick texture
4/26/2010	2	38	4	BB	413	easy to chew, little bit more tough than some of the others
4/26/2010	2	39	5	BB	413	.
4/26/2010	2	40	5	BB	413	texture tastes like typical beef
4/26/2010	2	41	5	BB	413	it's very ground beef like
4/26/2010	2	42	5	BB	413	did not like texture, too hard
4/26/2010	2	45	1	BB	413	.
4/26/2010	2	46	1	BB	413	.
4/26/2010	2	47	1	BB	413	I love everything
4/26/2010	2	51	5	BB	413	soft and warm
4/26/2010	2	52	5	BB	413	smooth
4/26/2010	2	53	5	BB	413	perfect
4/26/2010	2	54	4	BB	413	it was moist and easy to chew
4/26/2010	2	55	4	BB	413	nothing out of the ordinary
4/26/2010	2	56	4	BB	413	tenderness and chewiness/typical
4/26/2010	2	63	5	BB	413	easy to eat. It was what I expected.
4/26/2010	2	64	5	BB	413	.
4/26/2010	2	65	5	BB	413	like the average burger
4/26/2010	2	66	5	BB	413	very smooth, easy to chew

4/26/2010	2	24	5	BTS	276	very tender
4/26/2010	2	25	5	BTS	276	.
4/26/2010	2	26	4	BTS	276	.
4/26/2010	2	27	4	BTS	276	good texture
4/26/2010	2	28	4	BTS	276	very close to commercial
4/26/2010	2	29	4	BTS	276	easy to chew
4/26/2010	2	30	5	BTS	276	had a more burger chew
4/26/2010	2	34	4	BTS	276	it was on the tender side
4/26/2010	2	35	4	BTS	276	n/a do not like the texture
4/26/2010	2	36	1	BTS	276	it wasn't chunky
4/26/2010	2	37	1	BTS	276	thick, granular
4/26/2010	2	38	1	BTS	276	very soft - like
4/26/2010	2	39	4	BTS	276	tender yet with a little toughness
4/26/2010	2	40	4	BTS	276	smoother, not too chewy
4/26/2010	2	41	4	BTS	276	was like ground beef, just tough
4/26/2010	2	42	4	BTS	276	tenderness
4/26/2010	2	45	5	BTS	276	.
4/26/2010	2	46	5	BTS	276	texture was like eating burger
4/26/2010	2	47	5	BTS	276	everything
4/26/2010	2	51	4	BTS	276	was somewhat soft
4/26/2010	2	52	4	BTS	276	smooth
4/26/2010	2	53	4	BTS	276	not as tender, a lot more chewy
4/26/2010	2	54	1	BTS	276	it was moist
4/26/2010	2	55	1	BTS	276	typical ground beef texture, not unusual, which is good
4/26/2010	2	56	1	BTS	276	its typical and not surprising
4/26/2010	2	63	4	BTS	276	it wasn't weird or abnormal
4/26/2010	2	64	4	BTS	276	.
4/26/2010	2	65	4	BTS	276	not chewy soft and nice
4/26/2010	2	66	4	BTS	276	very easy to chew, nice smooth feeling against tongue
5/3/2010	3	7	6	BTS	850	Looks well done. Nice edge on it. For a big piece it looks good.
5/3/2010	3	43	6	BTS	850	Soft, smooth feeling
5/3/2010	3	44	6	BTS	850	It was compact and not chunky
5/3/2010	3	48	6	BTS	850	good, smooth texture

5/3/2010	3	49	6	BTS	850	nothing
5/3/2010	3	50	6	BTS	850	smooth
5/3/2010	3	57	1	BTS	850	very juicy
5/3/2010	3	58	1	BTS	850	very much like a typical hamburger
5/3/2010	3	59	1	BTS	850	not gritty
5/3/2010	3	60	1	BTS	850	didn't leave small unswallowed pieces
5/3/2010	3	61	1	BTS	850	juicy, cooked well with dark colors and less pink/red
5/3/2010	3	62	1	BTS	850	not too fatty at all
5/3/2010	3	67	3	BTS	850	feels like a lean beef patty
5/3/2010	3	68	3	BTS	850	not tough
5/3/2010	3	69	3	BTS	850	tender - crumbly
5/3/2010	3	70	3	BTS	850	.
5/3/2010	3	71	3	BTS	850	consistent particle size
5/3/2010	3	72	3	BTS	850	slightly tough maybe due to dryness
5/3/2010	3	73	2	BTS	850	it was tender
5/3/2010	3	74	2	BTS	850	well formed
5/3/2010	3	75	2	BTS	850	it was tender!
5/3/2010	3	76	2	BTS	850	not really grainy
5/3/2010	3	77	2	BTS	850	it was fairly normal
5/3/2010	3	78	2	BTS	850	tender
5/3/2010	3	79	6	BTS	850	.
5/3/2010	3	80	6	BTS	850	.
5/3/2010	3	81	6	BTS	850	easy to bite through and chew
5/3/2010	3	82	1	BTS	850	it was not rough at all.
5/3/2010	3	83	1	BTS	850	ground beef texture
5/3/2010	3	84	1	BTS	850	not so good
5/3/2010	3	85	3	BTS	850	not chunky
5/3/2010	3	86	3	BTS	850	nothing
5/3/2010	3	87	3	BTS	850	it was easy to eat and chew.
5/3/2010	3	88	2	BTS	850	.
5/3/2010	3	89	2	BTS	850	.
5/3/2010	3	90	2	BTS	850	n/a
5/3/2010	3	91	3	BTS	850	smaller "grounds"

5/3/2010	3	93	1	BTS	850	.
5/3/2010	3	94	1	BTS	850	consistent with typical patty
5/3/2010	3	95	1	BTS	850	.
4/19/2010	1	1	4	BTS	977	not too dry or tough
4/19/2010	1	2	4	BTS	977	It is juicy and not dry at all.
4/19/2010	1	3	4	BTS	977	.
4/19/2010	1	4	4	BTS	977	good mix of chewy, juices, and not too tough
4/19/2010	1	5	4	BTS	977	I really like the tenderness of this sample.
4/19/2010	1	6	4	BTS	977	dense and tender
4/19/2010	1	8	1	BTS	977	good texture, easy to chew
4/19/2010	1	9	1	BTS	977	very tender and juicy
4/19/2010	1	10	1	BTS	977	normal, I didn't mind it
4/19/2010	1	11	3	BTS	977	nothing
4/19/2010	1	12	3	BTS	977	nothing
4/19/2010	1	13	3	BTS	977	tender
4/19/2010	1	14	1	BTS	977	juicy, tender
4/19/2010	1	15	1	BTS	977	.
4/19/2010	1	16	1	BTS	977	nice texture
4/19/2010	1	17	3	BTS	977	easy to bite and chew
4/19/2010	1	18	1	BTS	977	it is soft, but you feel the particle make up
4/19/2010	1	19	1	BTS	977	different, smaller bumps
4/19/2010	1	20	1	BTS	977	it was very ground beef like
4/19/2010	1	21	4	BTS	977	.
4/19/2010	1	22	4	BTS	977	really moist and good hamburger taste
4/19/2010	1	23	4	BTS	977	.
4/19/2010	1	31	3	BTS	977	it was fine
4/19/2010	1	32	3	BTS	977	it was beef like
4/19/2010	1	33	3	BTS	977	not too greasy or crumbly
4/19/2010	1	1	3	C	501	similar to ground beef
4/19/2010	1	2	3	C	501	It felt like beef and not just fat.
4/19/2010	1	3	3	C	501	well done
4/19/2010	1	4	3	C	501	not horribly tough

4/19/2010	1	5	3	C	501	Overall it had a pretty good texture
4/19/2010	1	6	3	C	501	very consistent
4/19/2010	1	8	2	C	501	it has normal ground beef texture
4/19/2010	1	9	2	C	501	it had the regular texture of a hamburger
4/19/2010	1	10	2	C	501	texture was fine/normal
4/19/2010	1	11	6	C	501	not too tender or tough
4/19/2010	1	12	6	C	501	it was not mushy or watery
4/19/2010	1	13	6	C	501	.
4/19/2010	1	14	2	C	501	didn't like
4/19/2010	1	15	2	C	501	much better than 977
4/19/2010	1	16	2	C	501	had a good texture
4/19/2010	1	17	6	C	501	juicy, easy to bite and chew
4/19/2010	1	18	2	C	501	it is firm and there is particle definition
4/19/2010	1	19	2	C	501	same as last
4/19/2010	1	20	2	C	501	I didn't really like the texture
4/19/2010	1	21	2	C	501	.
4/19/2010	1	22	2	C	501	wasn't as ground beef like
4/19/2010	1	23	2	C	501	.
4/19/2010	1	31	6	C	501	seemed like normal ground beef
4/19/2010	1	32	6	C	501	soft
4/19/2010	1	33	6	C	501	.
4/26/2010	2	24	3	C	646	.
4/26/2010	2	25	3	C	646	it was chewy but not tough
4/26/2010	2	26	2	C	646	.
4/26/2010	2	27	3	C	646	typical
4/26/2010	2	28	3	C	646	tender!
4/26/2010	2	29	3	C	646	moist
4/26/2010	2	30	3	C	646	.
4/26/2010	2	34	2	C	646	it was not hard to eat
4/26/2010	2	35	2	C	646	the only thing was that it was not tough
4/26/2010	2	36	2	C	646	not too hard or tough
4/26/2010	2	37	2	C	646	not as grainy
4/26/2010	2	38	2	C	646	nothing

4/26/2010	2	39	3	C	646	the right level of tender/tough
4/26/2010	2	40	3	C	646	typical ground beef texture
4/26/2010	2	41	3	C	646	it was good. A little tough, but very much like ground beef.
4/26/2010	2	42	3	C	646	consistent
4/26/2010	2	45	3	C	646	goes down throat smoothly
4/26/2010	2	46	3	C	646	.
4/26/2010	2	47	3	C	646	very easy to chew
4/26/2010	2	51	2	C	646	it was soft
4/26/2010	2	52	2	C	646	soft
4/26/2010	2	53	2	C	646	very plump and juicy
4/26/2010	2	54	2	C	646	it stuck together
4/26/2010	2	55	2	C	646	typical texture for most part
4/26/2010	2	56	2	C	646	.
4/26/2010	2	63	2	C	646	It was easy to chew.
4/26/2010	2	64	2	C	646	.
4/26/2010	2	65	2	C	646	n/a
4/26/2010	2	66	2	C	646	soft, somewhat tender
5/3/2010	3	7	3	C	837	It was easy to bite into. Didn't have to chew long to finish the bite.
5/3/2010	3	43	3	C	837	very smooth, natural texture
5/3/2010	3	44	3	C	837	it was juicy
5/3/2010	3	48	3	C	837	solid
5/3/2010	3	49	3	C	837	it wasn't really tough
5/3/2010	3	50	3	C	837	.
5/3/2010	3	57	3	C	837	.
5/3/2010	3	58	3	C	837	.
5/3/2010	3	59	3	C	837	typical patty
5/3/2010	3	60	3	C	837	it was normal
5/3/2010	3	61	3	C	837	rough, outside cooked to a nice dark brown
5/3/2010	3	62	3	C	837	beef stayed together well, whole beef texture.
5/3/2010	3	67	5	C	837	was not really bad
5/3/2010	3	68	5	C	837	didn't look bad
5/3/2010	3	69	5	C	837	.

5/3/2010	3	70	5	C	837	.
5/3/2010	3	71	5	C	837	tough grissle pieces
5/3/2010	3	72	5	C	837	very homogeneous in texture
5/3/2010	3	73	1	C	837	it was tender
5/3/2010	3	74	1	C	837	it is soft but not extremely
5/3/2010	3	75	1	C	837	tasted like ground beef. not hard at all
5/3/2010	3	76	1	C	837	.
5/3/2010	3	77	1	C	837	would go good in a burger with other things layered on
5/3/2010	3	78	1	C	837	tender
5/3/2010	3	79	3	C	837	.
5/3/2010	3	80	3	C	837	it's tender and easy to chew
5/3/2010	3	81	3	C	837	.
5/3/2010	3	82	3	C	837	it was not extra rough
5/3/2010	3	83	3	C	837	fracturability good
5/3/2010	3	84	3	C	837	.
5/3/2010	3	85	5	C	837	smooth
5/3/2010	3	86	5	C	837	texture was juicy and soft in mouth
5/3/2010	3	87	5	C	837	nothing
5/3/2010	3	88	1	C	837	.
5/3/2010	3	89	1	C	837	.
5/3/2010	3	90	1	C	837	good
5/3/2010	3	91	5	C	837	great texture and feel
5/3/2010	3	93	3	C	837	.
5/3/2010	3	94	3	C	837	nothing
5/3/2010	3	95	3	C	837	.
5/3/2010	3	7	1	CG	470	outside look fine.
5/3/2010	3	43	1	CG	470	.
5/3/2010	3	44	1	CG	470	it did not fall apart.
5/3/2010	3	48	1	CG	470	.
5/3/2010	3	49	1	CG	470	it was tender and easy to eat
5/3/2010	3	50	1	CG	470	tastes like a burger
5/3/2010	3	57	4	CG	470	.

5/3/2010	3	58	4	CG	470	tasted normal
5/3/2010	3	59	4	CG	470	nothing
5/3/2010	3	60	4	CG	470	.
5/3/2010	3	61	4	CG	470	rough looking texture and did not have a compressed meat sample look
5/3/2010	3	62	4	CG	470	relatively good texture of the beef part, not the fatty part
5/3/2010	3	67	4	CG	470	did not
5/3/2010	3	68	4	CG	470	it was different
5/3/2010	3	69	4	CG	470	tender
5/3/2010	3	70	4	CG	470	.
5/3/2010	3	71	4	CG	470	lots of air pockets
5/3/2010	3	72	4	CG	470	.
5/3/2010	3	73	3	CG	470	it was tender
5/3/2010	3	74	3	CG	470	similar to ground beef
5/3/2010	3	75	3	CG	470	nothing
5/3/2010	3	76	3	CG	470	.
5/3/2010	3	77	3	CG	470	.
5/3/2010	3	78	3	CG	470	tender
5/3/2010	3	79	1	CG	470	good bite
5/3/2010	3	80	1	CG	470	don't like
5/3/2010	3	81	1	CG	470	easy to bite through and chew
5/3/2010	3	82	4	CG	470	it didn't seem cooked
5/3/2010	3	83	4	CG	470	n/a
5/3/2010	3	84	4	CG	470	it is good/enough to me :)
5/3/2010	3	85	4	CG	470	smooth
5/3/2010	3	86	4	CG	470	nothing
5/3/2010	3	87	4	CG	470	very easy to chew and taste
5/3/2010	3	88	3	CG	470	it was ok overall
5/3/2010	3	89	3	CG	470	.
5/3/2010	3	90	3	CG	470	n/a
5/3/2010	3	91	4	CG	470	.
5/3/2010	3	93	4	CG	470	.
5/3/2010	3	94	4	CG	470	characteristic of a typical patty

5/3/2010	3	95	4	CG	470	very good!
4/19/2010	1	1	6	CG	477	.
4/19/2010	1	2	6	CG	477	It's not oily on the lips.
4/19/2010	1	3	6	CG	477	.
4/19/2010	1	4	6	CG	477	very juicy and tender
4/19/2010	1	5	6	CG	477	.
4/19/2010	1	6	6	CG	477	super tender
4/19/2010	1	8	6	CG	477	sticks together
4/19/2010	1	9	6	CG	477	nothing
4/19/2010	1	10	6	CG	477	good, normal
4/19/2010	1	11	5	CG	477	not too tender
4/19/2010	1	12	5	CG	477	it was just tough enough and just tender enough
4/19/2010	1	13	5	CG	477	.
4/19/2010	1	14	6	CG	477	chewy
4/19/2010	1	15	6	CG	477	.
4/19/2010	1	16	6	CG	477	it was normal
4/19/2010	1	17	5	CG	477	easy to chew and bite
4/19/2010	1	18	6	CG	477	it's good, the combination of juice and firmness and particle definition
4/19/2010	1	19	6	CG	477	all the same
4/19/2010	1	20	6	CG	477	I don't like the texture
4/19/2010	1	21	1	CG	477	.
4/19/2010	1	22	1	CG	477	it was soft and fell apart nicely
4/19/2010	1	23	1	CG	477	.
4/19/2010	1	31	5	CG	477	seemed like normal ground beef
4/19/2010	1	32	5	CG	477	it was moist
4/19/2010	1	33	5	CG	477	.
4/26/2010	2	24	6	CG	530	the way it felt after chewing
4/26/2010	2	25	6	CG	530	.
4/26/2010	2	26	1	CG	530	great texture, no gristle or fat particles
4/26/2010	2	27	6	CG	530	the right texture
4/26/2010	2	28	6	CG	530	.
4/26/2010	2	29	6	CG	530	very tender

4/26/2010	2	30	6	CG	530	.
4/26/2010	2	34	1	CG	530	it was pretty hearty
4/26/2010	2	35	1	CG	530	great ground beef like texture
4/26/2010	2	36	6	CG	530	wasn't tough
4/26/2010	2	37	6	CG	530	filling texture
4/26/2010	2	38	6	CG	530	not too chewy - very easy though to swallow
4/26/2010	2	39	6	CG	530	.
4/26/2010	2	40	6	CG	530	smoother, and pretty tender
4/26/2010	2	41	6	CG	530	ground beef like, sort of
4/26/2010	2	42	6	CG	530	.
4/26/2010	2	45	6	CG	530	.
4/26/2010	2	46	6	CG	530	.
4/26/2010	2	47	6	CG	530	very tender
4/26/2010	2	51	1	CG	530	it was very tender
4/26/2010	2	52	1	CG	530	smooth
4/26/2010	2	53	1	CG	530	very good
4/26/2010	2	54	6	CG	530	it was moist
4/26/2010	2	55	6	CG	530	inside was a good color
4/26/2010	2	56	6	CG	530	typical, easy to chew and swallow
4/26/2010	2	63	1	CG	530	it wasn't hard to eat. It wasn’t slimy like some meats are with fat on them
4/26/2010	2	64	1	CG	530	typical ground beef texture
4/26/2010	2	65	1	CG	530	its not chewy
4/26/2010	2	66	1	CG	530	it wasn't too chewy
4/19/2010	1	1	1	Ch	139	texture was very similar to regular ground beef
4/19/2010	1	2	1	Ch	139	that you didn't have to chew and chew to eat it. That it wasn't a solid one piece of meat feel.
4/19/2010	1	3	1	Ch	139	well done
4/19/2010	1	4	1	Ch	139	chewy and juicy
4/19/2010	1	5	1	Ch	139	it was just like any other ground beef
4/19/2010	1	6	1	Ch	139	Consistent
4/19/2010	1	8	3	Ch	139	it has good ground beef texture

4/19/2010	1	9	3	Ch	139	good consistency, good bite
4/19/2010	1	10	3	Ch	139	normal, chewy
4/19/2010	1	11	1	Ch	139	pretty normal
4/19/2010	1	12	1	Ch	139	wasn't hard
4/19/2010	1	13	1	Ch	139	tenderness
4/19/2010	1	14	3	Ch	139	soft, chewy
4/19/2010	1	15	3	Ch	139	.
4/19/2010	1	16	3	Ch	139	nice texture
4/19/2010	1	17	1	Ch	139	easy to bite on, easy to chew on, cohesive during chewing
4/19/2010	1	18	3	Ch	139	tough feel, more connective tissue
4/19/2010	1	19	3	Ch	139	.
4/19/2010	1	20	3	Ch	139	it resembles ground beef
4/19/2010	1	21	3	Ch	139	good texture, not too chewy
4/19/2010	1	22	3	Ch	139	good solid ground beef feel
4/19/2010	1	23	3	Ch	139	.
4/19/2010	1	31	1	Ch	139	it seemed normal
4/19/2010	1	32	1	Ch	139	easy to chew
4/19/2010	1	33	1	Ch	139	very juicy, not dry at all, and not too crumbly
5/3/2010	3	7	4	Ch	640	It looks really good. I like the edge of it.
5/3/2010	3	43	4	Ch	640	The juciness and tenderness = a great beef texture
5/3/2010	3	44	4	Ch	640	It looked like ground beef.
5/3/2010	3	48	4	Ch	640	smooth, easy to eat
5/3/2010	3	49	4	Ch	640	nothing
5/3/2010	3	50	4	Ch	640	smooth
5/3/2010	3	57	2	Ch	640	.
5/3/2010	3	58	2	Ch	640	.
5/3/2010	3	59	2	Ch	640	like a hamburger patty
5/3/2010	3	60	2	Ch	640	pretty solid
5/3/2010	3	61	2	Ch	640	juicy, not flat and compressed, but rough and dark brown
5/3/2010	3	62	2	Ch	640	consistency was alright, like normal ground beef
5/3/2010	3	67	2	Ch	640	good, no grittiness
5/3/2010	3	68	2	Ch	640	not rough
5/3/2010	3	69	2	Ch	640	similar to commercial products

5/3/2010	3	70	2	Ch	640	just firm enough that it doesn't fall apart when you bite
5/3/2010	3	71	2	Ch	640	consistent texture throughout sample
5/3/2010	3	72	2	Ch	640	very tender
5/3/2010	3	73	5	Ch	640	it was tender
5/3/2010	3	74	5	Ch	640	well formed, not tough
5/3/2010	3	75	5	Ch	640	bar-b-q hamburger texture
5/3/2010	3	76	5	Ch	640	.
5/3/2010	3	77	5	Ch	640	.
5/3/2010	3	78	5	Ch	640	tender typical
5/3/2010	3	79	4	Ch	640	less densely packed region was more desirable
5/3/2010	3	80	4	Ch	640	easy to chew, good texture
5/3/2010	3	81	4	Ch	640	good bite
5/3/2010	3	82	2	Ch	640	the texture was cool but a little hard to chew.
5/3/2010	3	83	2	Ch	640	typical ground beef texture
5/3/2010	3	84	2	Ch	640	good
5/3/2010	3	85	2	Ch	640	normal GB texture
5/3/2010	3	86	2	Ch	640	nothing
5/3/2010	3	87	2	Ch	640	I like the roughness
5/3/2010	3	88	5	Ch	640	it was well blended
5/3/2010	3	89	5	Ch	640	.
5/3/2010	3	90	5	Ch	640	good
5/3/2010	3	91	2	Ch	640	good ground beef texture
5/3/2010	3	93	2	Ch	640	.
5/3/2010	3	94	2	Ch	640	nothing
5/3/2010	3	95	2	Ch	640	.
4/26/2010	2	24	2	Ch	867	.
4/26/2010	2	25	2	Ch	867	.
4/26/2010	2	26	3	Ch	867	pretty good texture
4/26/2010	2	27	1	Ch	867	what I was used to
4/26/2010	2	28	1	Ch	867	.
4/26/2010	2	29	1	Ch	867	felt like the beef I'm used to
4/26/2010	2	30	2	Ch	867	outer of patty
4/26/2010	2	34	3	Ch	867	.

4/26/2010	2	35	3	Ch	867	great burger texture
4/26/2010	2	36	3	Ch	867	it didn't feel consistent to me
4/26/2010	2	37	3	Ch	867	more like typical ground beef
4/26/2010	2	38	3	Ch	867	easy to chew
4/26/2010	2	39	1	Ch	867	smooth and firm
4/26/2010	2	40	1	Ch	867	like ground beef texture
4/26/2010	2	41	1	Ch	867	it was really tender and ground beef like
4/26/2010	2	42	1	Ch	867	tender yet juicy
4/26/2010	2	45	2	Ch	867	smooth
4/26/2010	2	46	2	Ch	867	texture was solid
4/26/2010	2	47	2	Ch	867	it was compact
4/26/2010	2	51	3	Ch	867	this was more rubbery than the last two
4/26/2010	2	52	3	Ch	867	smooth
4/26/2010	2	53	3	Ch	867	.
4/26/2010	2	54	3	Ch	867	it was juicy.
4/26/2010	2	55	3	Ch	867	looks normal
4/26/2010	2	56	3	Ch	867	the normality
4/26/2010	2	63	3	Ch	867	it was what I expected
4/26/2010	2	64	3	Ch	867	good, not too rubbery
4/26/2010	2	65	3	Ch	867	n/a
4/26/2010	2	66	3	Ch	867	very tender
5/3/2010	3	7	2	RM	157	It looks like ground beef.
5/3/2010	3	43	2	RM	157	Pretty smooth but the dry feels rough.
5/3/2010	3	44	2	RM	157	it was juicy and better look to it
5/3/2010	3	48	2	RM	157	very smooth
5/3/2010	3	49	2	RM	157	nothing
5/3/2010	3	50	2	RM	157	.
5/3/2010	3	57	6	RM	157	nothing
5/3/2010	3	58	6	RM	157	not bad fairly tender
5/3/2010	3	59	6	RM	157	easy to chew
5/3/2010	3	60	6	RM	157	typical texture for most part
5/3/2010	3	61	6	RM	157	not much pink in meat, rough brown (dark) look

5/3/2010	3	62	6	RM	157	meat part was good in texture
5/3/2010	3	67	1	RM	157	overall good
5/3/2010	3	68	1	RM	157	normal, not odd
5/3/2010	3	69	1	RM	157	very tender
5/3/2010	3	70	1	RM	157	.
5/3/2010	3	71	1	RM	157	tender
5/3/2010	3	72	1	RM	157	very tender
5/3/2010	3	73	4	RM	157	it was tender
5/3/2010	3	74	4	RM	157	common texture to beef patties
5/3/2010	3	75	4	RM	157	had a hamburger texture
5/3/2010	3	76	4	RM	157	.
5/3/2010	3	77	4	RM	157	normal texture
5/3/2010	3	78	4	RM	157	tender
5/3/2010	3	79	2	RM	157	more like regular ground beef
5/3/2010	3	80	2	RM	157	it's tender
5/3/2010	3	81	2	RM	157	easy to bite through and chew
5/3/2010	3	82	6	RM	157	it was good
5/3/2010	3	83	6	RM	157	n/a
5/3/2010	3	84	6	RM	157	I like the tenderness
5/3/2010	3	85	1	RM	157	well-ground
5/3/2010	3	86	1	RM	157	not fatty, nice mouth feel
5/3/2010	3	87	1	RM	157	I like the heavier textures
5/3/2010	3	88	4	RM	157	?
5/3/2010	3	89	4	RM	157	.
5/3/2010	3	90	4	RM	157	good
5/3/2010	3	91	1	RM	157	not too juicy
5/3/2010	3	93	6	RM	157	.
5/3/2010	3	94	6	RM	157	good particle size
5/3/2010	3	95	6	RM	157	.
4/26/2010	2	24	4	RM	335	.
4/26/2010	2	25	4	RM	335	.
4/26/2010	2	26	6	RM	335	soft and chewy
4/26/2010	2	27	2	RM	335	easy to chew

4/26/2010	2	28	2	RM	335	tender enough
4/26/2010	2	29	2	RM	335	.
4/26/2010	2	30	4	RM	335	chewable
4/26/2010	2	34	6	RM	335	it was pretty tender
4/26/2010	2	35	6	RM	335	it was okay
4/26/2010	2	36	5	RM	335	wasn't too chunky
4/26/2010	2	37	5	RM	335	not as grainy
4/26/2010	2	38	5	RM	335	very much like a ground beef burger - nice texture
4/26/2010	2	39	2	RM	335	.
4/26/2010	2	40	2	RM	335	smoother texture
4/26/2010	2	41	2	RM	335	pretty ground beef like
4/26/2010	2	42	2	RM	335	feels nice in mouth
4/26/2010	2	45	4	RM	335	.
4/26/2010	2	46	4	RM	335	nothing
4/26/2010	2	47	4	RM	335	not too compact
4/26/2010	2	51	6	RM	335	soft
4/26/2010	2	52	6	RM	335	smooth
4/26/2010	2	53	6	RM	335	harder than the other ones (firm)
4/26/2010	2	54	5	RM	335	it was soft
4/26/2010	2	55	5	RM	335	texture looked best so far
4/26/2010	2	56	5	RM	335	.
4/26/2010	2	63	6	RM	335	I didn't chew it very much to know
4/26/2010	2	64	6	RM	335	good texture
4/26/2010	2	65	6	RM	335	n/a
4/26/2010	2	66	6	RM	335	soft, smooth
4/19/2010	1	1	2	RM	960	.
4/19/2010	1	2	2	RM	960	It holds together in the mouth
4/19/2010	1	3	2	RM	960	firm
4/19/2010	1	4	2	RM	960	good texture not overly chewy and not tough
4/19/2010	1	5	2	RM	960	I really enjoyed how tender it was.
4/19/2010	1	6	2	RM	960	very tender
4/19/2010	1	8	5	RM	960	it doesn't come apart
4/19/2010	1	9	5	RM	960	very tender

4/19/2010	1	10	5	RM	960	normal, tender
4/19/2010	1	11	4	RM	960	juicy
4/19/2010	1	12	4	RM	960	it was good on the outside
4/19/2010	1	13	4	RM	960	very tender
4/19/2010	1	14	5	RM	960	thick, chewy
4/19/2010	1	15	5	RM	960	.
4/19/2010	1	16	5	RM	960	nice and subtle
4/19/2010	1	17	4	RM	960	easy to bite and chew
4/19/2010	1	18	5	RM	960	no connective tissue feel and soft
4/19/2010	1	19	5	RM	960	.
4/19/2010	1	20	5	RM	960	it was juicy and ground beef like
4/19/2010	1	21	6	RM	960	.
4/19/2010	1	22	6	RM	960	great texture, fell apart like ground beef
4/19/2010	1	23	6	RM	960	.
4/19/2010	1	31	4	RM	960	it wasn't terrible
4/19/2010	1	32	4	RM	960	soft, moist
4/19/2010	1	33	4	RM	960	.

CONSUMER COMMENTS Q10

Date	B	P	Ord	Trt	Code	Q10
5/3/2010	3	7	5	BB	351	nothing
5/3/2010	3	43	5	BB	351	kind of chewy/tacky
5/3/2010	3	44	5	BB	351	none
5/3/2010	3	48	5	BB	351	n/a
5/3/2010	3	49	5	BB	351	fell off of the toothpick when I took a bite
5/3/2010	3	50	5	BB	351	.
5/3/2010	3	57	5	BB	351	rubbery
5/3/2010	3	58	5	BB	351	rubbery texture
5/3/2010	3	59	5	BB	351	nasty
5/3/2010	3	60	5	BB	351	.
5/3/2010	3	61	5	BB	351	spongy taste that was the easiest to chew
5/3/2010	3	62	5	BB	351	little bit greasy
5/3/2010	3	67	6	BB	351	nothing really
5/3/2010	3	68	6	BB	351	too tough at some points
5/3/2010	3	69	6	BB	351	gritty
5/3/2010	3	70	6	BB	351	too much grissel
5/3/2010	3	71	6	BB	351	.
5/3/2010	3	72	6	BB	351	.
5/3/2010	3	73	6	BB	351	not a lot
5/3/2010	3	74	6	BB	351	coarsey
5/3/2010	3	75	6	BB	351	nothing
5/3/2010	3	76	6	BB	351	too chewy
5/3/2010	3	77	6	BB	351	way too greasy
5/3/2010	3	78	6	BB	351	nothing
5/3/2010	3	79	5	BB	351	very dense
5/3/2010	3	80	5	BB	351	it's like cracking in the mouth
5/3/2010	3	81	5	BB	351	crumbly, dry
5/3/2010	3	82	5	BB	351	not cooked enough
5/3/2010	3	83	5	BB	351	n/a
5/3/2010	3	84	5	BB	351	.

5/3/2010	3	85	6	BB	351	familiar - kinda boring	
5/3/2010	3	86	6	BB	351	dry and gritty	
5/3/2010	3	87	6	BB	351	it was somewhat dry and rough	
5/3/2010	3	88	6	BB	351	it was a little too juicy/patty for me	
5/3/2010	3	89	6	BB	351	.	
5/3/2010	3	90	6	BB	351	n/a	
5/3/2010	3	91	6	BB	351	too dry	
5/3/2010	3	93	5	BB	351	.	
5/3/2010	3	94	5	BB	351	chewy (sticks to teeth)	
5/3/2010	3	95	5	BB	351	kind of mushy	
4/19/2010	1	1	5	BB	384	.	
4/19/2010	1	2	5	BB	384	It feels oily on the lips, you can feel the beads of fat every now and then.	
4/19/2010	1	3	5	BB	384	.	
4/19/2010	1	4	5	BB	384	was too chewy. Unusually chewy texture	
4/19/2010	1	5	5	BB	384	.	
4/19/2010	1	6	5	BB	384	not consistent	
4/19/2010	1	8	4	BB	384	comes apart easily	
4/19/2010	1	9	4	BB	384	nothing	
4/19/2010	1	10	4	BB	384		0
4/19/2010	1	11	2	BB	384	nothing	
4/19/2010	1	12	2	BB	384	texture was good	
4/19/2010	1	13	2	BB	384	n/a	
4/19/2010	1	14	4	BB	384	too soft	
4/19/2010	1	15	4	BB	384	.	
4/19/2010	1	16	4	BB	384	nothing	
4/19/2010	1	17	2	BB	384	.	
4/19/2010	1	18	4	BB	384	it's okay	
4/19/2010	1	19	4	BB	384	more like typical ground beef	
4/19/2010	1	20	4	BB	384	a little dry	
4/19/2010	1	21	5	BB	384	gritty and chewy	
4/19/2010	1	22	5	BB	384	I wish it would have had more flavor for how much I liked the texture	

4/19/2010	1	23	5	BB	384	.
4/19/2010	1	31	2	BB	384	not really anything
4/19/2010	1	32	2	BB	384	it was ugly
4/19/2010	1	33	2	BB	384	.
4/26/2010	2	24	1	BB	413	nothing
4/26/2010	2	25	1	BB	413	.
4/26/2010	2	26	5	BB	413	.
4/26/2010	2	27	5	BB	413	a little dry
4/26/2010	2	28	5	BB	413	.
4/26/2010	2	29	5	BB	413	.
4/26/2010	2	30	1	BB	413	the center was a bit too chewy
4/26/2010	2	34	5	BB	413	it could have been more tender
4/26/2010	2	35	5	BB	413	doesnot maintain adhered, falls apart
4/26/2010	2	36	4	BB	413	it felt weird, felt a little rubbery
4/26/2010	2	37	4	BB	413	very granular
4/26/2010	2	38	4	BB	413	maybe could be a little tougher to ? As a big burger patty
4/26/2010	2	39	5	BB	413	.
4/26/2010	2	40	5	BB	413	little too chewy
4/26/2010	2	41	5	BB	413	none
4/26/2010	2	42	5	BB	413	too hard
4/26/2010	2	45	1	BB	413	somewhat chewy
4/26/2010	2	46	1	BB	413	a little bit chewy at times
4/26/2010	2	47	1	BB	413	nothing
4/26/2010	2	51	5	BB	413	a little rubbery
4/26/2010	2	52	5	BB	413	nothing
4/26/2010	2	53	5	BB	413	very rough, but it was good
4/26/2010	2	54	4	BB	413	it was lumpy
4/26/2010	2	55	4	BB	413	a little rough
4/26/2010	2	56	4	BB	413	.
4/26/2010	2	63	5	BB	413	nothing
4/26/2010	2	64	5	BB	413	extremely tough and rubbery
4/26/2010	2	65	5	BB	413	n/a
4/26/2010	2	66	5	BB	413	nothing

4/26/2010	2	24	5	BTS	276	nothing
4/26/2010	2	25	5	BTS	276	kind of tough
4/26/2010	2	26	4	BTS	276	a little too chewy
4/26/2010	2	27	4	BTS	276	a litte dry
4/26/2010	2	28	4	BTS	276	.
4/26/2010	2	29	4	BTS	276	.
4/26/2010	2	30	5	BTS	276	a bit tough
4/26/2010	2	34	4	BTS	276	.
4/26/2010	2	35	4	BTS	276	not preferred texture, low quality ground
4/26/2010	2	36	1	BTS	276	nothing
4/26/2010	2	37	1	BTS	276	slightly chewy
4/26/2010	2	38	1	BTS	276	almost too soft if were to be on a burger
4/26/2010	2	39	4	BTS	276	.
4/26/2010	2	40	4	BTS	276	.
4/26/2010	2	41	4	BTS	276	not tender
4/26/2010	2	42	4	BTS	276	nothing
4/26/2010	2	45	5	BTS	276	.
4/26/2010	2	46	5	BTS	276	.
4/26/2010	2	47	5	BTS	276	a little hard to chew
4/26/2010	2	51	4	BTS	276	toughest
4/26/2010	2	52	4	BTS	276	chunky
4/26/2010	2	53	4	BTS	276	.
4/26/2010	2	54	1	BTS	276	it was chewy
4/26/2010	2	55	1	BTS	276	nothing
4/26/2010	2	56	1	BTS	276	the chewiness
4/26/2010	2	63	4	BTS	276	it made my teeth stick a little to each other
4/26/2010	2	64	4	BTS	276	kind of tough
4/26/2010	2	65	4	BTS	276	n/a
4/26/2010	2	66	4	BTS	276	nothing
5/3/2010	3	7	6	BTS	850	nothing
5/3/2010	3	43	6	BTS	850	.
5/3/2010	3	44	6	BTS	850	somewhat dry

5/3/2010	3	48	6	BTS	850	a little dry, still good
5/3/2010	3	49	6	BTS	850	it was horrible and chewy and tough
5/3/2010	3	50	6	BTS	850	.
5/3/2010	3	57	1	BTS	850	a little dry
5/3/2010	3	58	1	BTS	850	.
5/3/2010	3	59	1	BTS	850	n/a
5/3/2010	3	60	1	BTS	850	n/a
5/3/2010	3	61	1	BTS	850	nothing
5/3/2010	3	62	1	BTS	850	meat was a little off not as greasy/beef like as I'm used to
5/3/2010	3	67	3	BTS	850	nothing
5/3/2010	3	68	3	BTS	850	kind of the same in large portions
5/3/2010	3	69	3	BTS	850	.
5/3/2010	3	70	3	BTS	850	a little rubbery
5/3/2010	3	71	3	BTS	850	too tough and dry
5/3/2010	3	72	3	BTS	850	.
5/3/2010	3	73	2	BTS	850	not a lot
5/3/2010	3	74	2	BTS	850	big chunks of meat
5/3/2010	3	75	2	BTS	850	nothing
5/3/2010	3	76	2	BTS	850	.
5/3/2010	3	77	2	BTS	850	found some weird tasting little particles
5/3/2010	3	78	2	BTS	850	nothing
5/3/2010	3	79	6	BTS	850	felt like it had bean skins in it
5/3/2010	3	80	6	BTS	850	cracking texture. It's missing something to make the texture more like ground beef
5/3/2010	3	81	6	BTS	850	.
5/3/2010	3	82	1	BTS	850	it may have been too soft.
5/3/2010	3	83	1	BTS	850	slightly chewy
5/3/2010	3	84	1	BTS	850	maybe because it was not cooking
5/3/2010	3	85	3	BTS	850	tough
5/3/2010	3	86	3	BTS	850	extremely greasy and gritty
5/3/2010	3	87	3	BTS	850	it was too mushy and sticky and chewy
5/3/2010	3	88	2	BTS	850	too dry
5/3/2010	3	89	2	BTS	850	.

5/3/2010	3	90	2	BTS	850	n/a	
5/3/2010	3	91	3	BTS	850	.	
5/3/2010	3	93	1	BTS	850	.	
5/3/2010	3	94	1	BTS	850	.	
5/3/2010	3	95	1	BTS	850	there were some big bubbles of fat	
4/19/2010	1	1	4	BTS	977	.	
4/19/2010	1	2	4	BTS	977	The outside edge is almost slimy. It feels oily.	
4/19/2010	1	3	4	BTS	977	you could feel some nerves	
4/19/2010	1	4	4	BTS	977	can feel individual morsels	
4/19/2010	1	5	4	BTS	977	.	
4/19/2010	1	6	4	BTS	977	not consistent	
4/19/2010	1	8	1	BTS	977	nothing	
4/19/2010	1	9	1	BTS	977	I dislike nothing	
4/19/2010	1	10	1	BTS	977		0
4/19/2010	1	11	3	BTS	977	too chewy	
4/19/2010	1	12	3	BTS	977	it was way too tender, wet, mushy	
4/19/2010	1	13	3	BTS	977	.	
4/19/2010	1	14	1	BTS	977	really thick	
4/19/2010	1	15	1	BTS	977	.	
4/19/2010	1	16	1	BTS	977	nothing	
4/19/2010	1	17	3	BTS	977	.	
4/19/2010	1	18	1	BTS	977	is okay	
4/19/2010	1	19	1	BTS	977	.	
4/19/2010	1	20	1	BTS	977	I like the texture	
4/19/2010	1	21	4	BTS	977	kind of chewy	
4/19/2010	1	22	4	BTS	977	decent amount of fat/marbling	
4/19/2010	1	23	4	BTS	977	.	
4/19/2010	1	31	3	BTS	977	seemed a little greasy	
4/19/2010	1	32	3	BTS	977	rough/gritty	
4/19/2010	1	33	3	BTS	977	.	
4/19/2010	1	1	3	C	501	very dry and a little tough	
4/19/2010	1	2	3	C	501	It also has that sticky, coating feel. The outside layer stuck	

						together.	
4/19/2010	1	3	3	C	501	.	
4/19/2010	1	4	3	C	501	way too chewy, can feel each morsel	
4/19/2010	1	5	3	C	501	.	
4/19/2010	1	6	3	C	501	gritty, kind of tough	
4/19/2010	1	8	2	C	501	it's a little chewy	
4/19/2010	1	9	2	C	501	it was somewhat tough	
4/19/2010	1	10	2	C	501		0
4/19/2010	1	11	6	C	501	a little too chewy	
4/19/2010	1	12	6	C	501	was a little too tough, needed to be more juicy	
4/19/2010	1	13	6	C	501	.	
4/19/2010	1	14	2	C	501	didn't seem like normal texture	
4/19/2010	1	15	2	C	501	.	
4/19/2010	1	16	2	C	501	nothing	
4/19/2010	1	17	6	C	501	.	
4/19/2010	1	18	2	C	501	a little dry and tougher bite to it	
4/19/2010	1	19	2	C	501	.	
4/19/2010	1	20	2	C	501	it didn't seem like regular ground beef, more like turkey	
4/19/2010	1	21	2	C	501	too chewy	
4/19/2010	1	22	2	C	501	kind of grainy, had to drink water to swallow it	
4/19/2010	1	23	2	C	501	.	
4/19/2010	1	31	6	C	501	nothing	
4/19/2010	1	32	6	C	501	almost too juicy	
4/19/2010	1	33	6	C	501	.	
4/26/2010	2	24	3	C	646	a little tough	
4/26/2010	2	25	3	C	646	.	
4/26/2010	2	26	2	C	646	texture was a little tough	
4/26/2010	2	27	3	C	646	a little dry	
4/26/2010	2	28	3	C	646	.	
4/26/2010	2	29	3	C	646	.	
4/26/2010	2	30	3	C	646	tougher than a normal beef patty	
4/26/2010	2	34	2	C	646	it wasn't extremely tender	
4/26/2010	2	35	2	C	646	the bite was not the best texture in a (good) ground beef bite	

4/26/2010	2	36	2	C	646	too chunky for me
4/26/2010	2	37	2	C	646	not typical of a lot of ground beef patties
4/26/2010	2	38	2	C	646	too chewy, very soft bite
4/26/2010	2	39	3	C	646	.
4/26/2010	2	40	3	C	646	n/a
4/26/2010	2	41	3	C	646	.
4/26/2010	2	42	3	C	646	hardness
4/26/2010	2	45	3	C	646	.
4/26/2010	2	46	3	C	646	chewy, takes a long time to chew down
4/26/2010	2	47	3	C	646	too compact
4/26/2010	2	51	2	C	646	it was soft but even more rubbery
4/26/2010	2	52	2	C	646	nothing
4/26/2010	2	53	2	C	646	very chewy
4/26/2010	2	54	2	C	646	it was too chewy
4/26/2010	2	55	2	C	646	a little too red for me in some parts
4/26/2010	2	56	2	C	646	extremely chewy and sticky
4/26/2010	2	63	2	C	646	nothing. I liked the texture.
4/26/2010	2	64	2	C	646	kinda rubbery, wasn't cooked enough
4/26/2010	2	65	2	C	646	a bit too chewy
4/26/2010	2	66	2	C	646	it was a little too chewy
5/3/2010	3	7	3	C	837	Well, it looks like a soy patty I ate once that was gross.
5/3/2010	3	43	3	C	837	.
5/3/2010	3	44	3	C	837	none
5/3/2010	3	48	3	C	837	grissle
5/3/2010	3	49	3	C	837	kinda chewy
5/3/2010	3	50	3	C	837	not smooth, very unground. More dry in the middle of the patty
5/3/2010	3	57	3	C	837	dry, hard to chew, sticky
5/3/2010	3	58	3	C	837	it felt spongy/rubbery
5/3/2010	3	59	3	C	837	n/a
5/3/2010	3	60	3	C	837	.
5/3/2010	3	61	3	C	837	very pink center that affected the taste in a bad way
5/3/2010	3	62	3	C	837	taste very processed/mushed up. Almost like beef scraps and not whole ground beef

5/3/2010	3	67	5	C	837	too gritty for me
5/3/2010	3	68	5	C	837	too tough
5/3/2010	3	69	5	C	837	didn't really crumble
5/3/2010	3	70	5	C	837	.
5/3/2010	3	71	5	C	837	the patties were inconsistent, there is a very large air pocket in one of the pieces
5/3/2010	3	72	5	C	837	.
5/3/2010	3	73	1	C	837	not a lot
5/3/2010	3	74	1	C	837	a little bit coarse
5/3/2010	3	75	1	C	837	nothing
5/3/2010	3	76	1	C	837	.
5/3/2010	3	77	1	C	837	just not normal, not bad though
5/3/2010	3	78	1	C	837	nothing
5/3/2010	3	79	3	C	837	collagen like toughness in some bites
5/3/2010	3	80	3	C	837	.
5/3/2010	3	81	3	C	837	firmer texture
5/3/2010	3	82	3	C	837	n/a
5/3/2010	3	83	3	C	837	chewy
5/3/2010	3	84	3	C	837	it is like a pasta
5/3/2010	3	85	5	C	837	nothing really
5/3/2010	3	86	5	C	837	nothing
5/3/2010	3	87	5	C	837	it fell apart in your mouth, very mushy and sticky
5/3/2010	3	88	1	C	837	didn't care for the small chunks of toughness in the patty
5/3/2010	3	89	1	C	837	.
5/3/2010	3	90	1	C	837	n/a
5/3/2010	3	91	5	C	837	.
5/3/2010	3	93	3	C	837	.
5/3/2010	3	94	3	C	837	rubbery
5/3/2010	3	95	3	C	837	there were large fat globs
5/3/2010	3	7	1	CG	470	it kind of looks fake, on inside.
5/3/2010	3	43	1	CG	470	it's a little tacky, while chewing.
5/3/2010	3	44	1	CG	470	it was a little dry.

5/3/2010	3	48	1	CG	470	a little grissle
5/3/2010	3	49	1	CG	470	nothing - texture was good
5/3/2010	3	50	1	CG	470	rough pellet-like pieces
5/3/2010	3	57	4	CG	470	hard piece in it, very dry, different
5/3/2010	3	58	4	CG	470	.
5/3/2010	3	59	4	CG	470	crunchy
5/3/2010	3	60	4	CG	470	it left pieces in my mouth after swallowing, sandy
5/3/2010	3	61	4	CG	470	light brown look that needs to be dark brown and pink center
5/3/2010	3	62	4	CG	470	too much extra stuff, not all meat, can taste little pieces of tendon or fat that an unwanted "crunch"
5/3/2010	3	67	4	CG	470	too gritty
5/3/2010	3	68	4	CG	470	a bit more rough than expected
5/3/2010	3	69	4	CG	470	.
5/3/2010	3	70	4	CG	470	.
5/3/2010	3	71	4	CG	470	gritty texture
5/3/2010	3	72	4	CG	470	there were particles and it gave the meat an undesirable crunch
5/3/2010	3	73	3	CG	470	not a lot
5/3/2010	3	74	3	CG	470	very coarsey, I can feel the little chunks of fat
5/3/2010	3	75	3	CG	470	tasted grainy? The meat was a little hard
5/3/2010	3	76	3	CG	470	grainy and dry
5/3/2010	3	77	3	CG	470	almost had a crunch to it big, coarse feeling
5/3/2010	3	78	3	CG	470	nothing
5/3/2010	3	79	1	CG	470	seemed to hold together more like lean muscle than regular ground beef
5/3/2010	3	80	1	CG	470	it seems like you are eating nerves
5/3/2010	3	81	1	CG	470	one bite had some grissle in it
5/3/2010	3	82	4	CG	470	it was to easy to come apart
5/3/2010	3	83	4	CG	470	n/a
5/3/2010	3	84	4	CG	470	.
5/3/2010	3	85	4	CG	470	nothing in particular
5/3/2010	3	86	4	CG	470	gritty and dry
5/3/2010	3	87	4	CG	470	had some parts that were too chewy
5/3/2010	3	88	3	CG	470	I would prefer a little less dry

5/3/2010	3	89	3	CG	470	.	
5/3/2010	3	90	3	CG	470	stringy	
5/3/2010	3	91	4	CG	470	it felt like there were pieces of hard matter in there	
5/3/2010	3	93	4	CG	470	.	
5/3/2010	3	94	4	CG	470	some CT, not much	
5/3/2010	3	95	4	CG	470	.	
4/19/2010	1	1	6	CG	477	.	
4/19/2010	1	2	6	CG	477	Tough and gritty.	
4/19/2010	1	3	6	CG	477	too much fat, or nerves in it	
4/19/2010	1	4	6	CG	477	still a little chewy but was a good mix of chewy and tender	
4/19/2010	1	5	6	CG	477	It's almost too tender.	
4/19/2010	1	6	6	CG	477	dense	
4/19/2010	1	8	6	CG	477	grainy	
4/19/2010	1	9	6	CG	477	very gritty and tough	
4/19/2010	1	10	6	CG	477		0
4/19/2010	1	11	5	CG	477	a little dry, tough	
4/19/2010	1	12	5	CG	477	outsides were a little mushy	
4/19/2010	1	13	5	CG	477	a little spongy, a few little hard balls	
4/19/2010	1	14	6	CG	477	kind of tough	
4/19/2010	1	15	6	CG	477	.	
4/19/2010	1	16	6	CG	477	some what gritty	
4/19/2010	1	17	5	CG	477	lack of cohesiveness	
4/19/2010	1	18	6	CG	477	it's good	
4/19/2010	1	19	6	CG	477	looks gross	
4/19/2010	1	20	6	CG	477	it tasted like there were a lot of add ins to the beef	
4/19/2010	1	21	1	CG	477	kind of gritty	
4/19/2010	1	22	1	CG	477	it was kind of gritty	
4/19/2010	1	23	1	CG	477	.	
4/19/2010	1	31	5	CG	477	nothing	
4/19/2010	1	32	5	CG	477	rough/hard to chew/gritty	
4/19/2010	1	33	5	CG	477	somewhat dry and crumbly	
4/26/2010	2	24	6	CG	530	a little tough	
4/26/2010	2	25	6	CG	530	it felt maybe over cooked?	

4/26/2010	2	26	1	CG	530	.
4/26/2010	2	27	6	CG	530	n/a
4/26/2010	2	28	6	CG	530	.
4/26/2010	2	29	6	CG	530	.
4/26/2010	2	30	6	CG	530	.
4/26/2010	2	34	1	CG	530	nothing
4/26/2010	2	35	1	CG	530	n/a good texture
4/26/2010	2	36	6	CG	530	it felt like I kept biting down on something funny
4/26/2010	2	37	6	CG	530	dry and grainy
4/26/2010	2	38	6	CG	530	.
4/26/2010	2	39	6	CG	530	chewy
4/26/2010	2	40	6	CG	530	slightly chewy
4/26/2010	2	41	6	CG	530	could feel grittiness, sort of
4/26/2010	2	42	6	CG	530	chewy
4/26/2010	2	45	6	CG	530	almost like crunchy spots
4/26/2010	2	46	6	CG	530	felt like every bite I was biting into salt or some other crystaline structure
4/26/2010	2	47	6	CG	530	kind of chewy
4/26/2010	2	51	1	CG	530	bland like
4/26/2010	2	52	1	CG	530	none
4/26/2010	2	53	1	CG	530	.
4/26/2010	2	54	6	CG	530	it was stringy
4/26/2010	2	55	6	CG	530	a little too dark on outside, but inside looked good
4/26/2010	2	56	6	CG	530	.
4/26/2010	2	63	1	CG	530	nothing
4/26/2010	2	64	1	CG	530	.
4/26/2010	2	65	1	CG	530	n/a
4/26/2010	2	66	1	CG	530	the texture was really good, so no dislikes
4/19/2010	1	1	1	Ch	139	slightly tough to chew
4/19/2010	1	2	1	Ch	139	It fell apart a little too fast for a hamburger.
4/19/2010	1	3	1	Ch	139	.
4/19/2010	1	4	1	Ch	139	a little fatty

4/19/2010	1	5	1	Ch	139	.	
4/19/2010	1	6	1	Ch	139	Chewy	
4/19/2010	1	8	3	Ch	139	a bit chewy	
4/19/2010	1	9	3	Ch	139	feels more greasy or fatty	
4/19/2010	1	10	3	Ch	139		0
4/19/2010	1	11	1	Ch	139	a little chewy	
4/19/2010	1	12	1	Ch	139	too tender	
4/19/2010	1	13	1	Ch	139	nothing	
4/19/2010	1	14	3	Ch	139	.	
4/19/2010	1	15	3	Ch	139	.	
4/19/2010	1	16	3	Ch	139	n/a	
4/19/2010	1	17	1	Ch	139	.	
4/19/2010	1	18	3	Ch	139	nothing	
4/19/2010	1	19	3	Ch	139	.	
4/19/2010	1	20	3	Ch	139	I like the texture	
4/19/2010	1	21	3	Ch	139	.	
4/19/2010	1	22	3	Ch	139	tasted some fatty portions	
4/19/2010	1	23	3	Ch	139	.	
4/19/2010	1	31	1	Ch	139	nothing	
4/19/2010	1	32	1	Ch	139	a little rough	
4/19/2010	1	33	1	Ch	139	nothing	
5/3/2010	3	7	4	Ch	640	.	
5/3/2010	3	43	4	Ch	640	.	
5/3/2010	3	44	4	Ch	640	very dry	
5/3/2010	3	48	4	Ch	640	n/a	
5/3/2010	3	49	4	Ch	640	my teeth felt like they were sticking together when I was chewing the meat	
5/3/2010	3	50	4	Ch	640	.	
5/3/2010	3	57	2	Ch	640	kind of sticky, stuck to my teeth, rubbery	
5/3/2010	3	58	2	Ch	640	didn't taste as good, maybe a fattier sample that normal	
5/3/2010	3	59	2	Ch	640	n/a	
5/3/2010	3	60	2	Ch	640	but left small pieces in mouth	
5/3/2010	3	61	2	Ch	640	too much inside of the meat	

5/3/2010	3	62	2	Ch	640	nothing
5/3/2010	3	67	2	Ch	640	nothing
5/3/2010	3	68	2	Ch	640	looked odd
5/3/2010	3	69	2	Ch	640	little gritty
5/3/2010	3	70	2	Ch	640	n/a
5/3/2010	3	71	2	Ch	640	.
5/3/2010	3	72	2	Ch	640	.
5/3/2010	3	73	5	Ch	640	not a lot
5/3/2010	3	74	5	Ch	640	fat in the sides
5/3/2010	3	75	5	Ch	640	nothing
5/3/2010	3	76	5	Ch	640	.
5/3/2010	3	77	5	Ch	640	a little too finely textured
5/3/2010	3	78	5	Ch	640	nothing
5/3/2010	3	79	4	Ch	640	.
5/3/2010	3	80	4	Ch	640	.
5/3/2010	3	81	4	Ch	640	.
5/3/2010	3	82	2	Ch	640	it was hard to chew at times
5/3/2010	3	83	2	Ch	640	slightly tough. Possibly due to thickness
5/3/2010	3	84	2	Ch	640	.
5/3/2010	3	85	2	Ch	640	tough to chew
5/3/2010	3	86	2	Ch	640	meat was gritty in mouth
5/3/2010	3	87	2	Ch	640	I dislike the chunkiness and clumps in the meat
5/3/2010	3	88	5	Ch	640	?
5/3/2010	3	89	5	Ch	640	.
5/3/2010	3	90	5	Ch	640	n/a
5/3/2010	3	91	2	Ch	640	a little dry
5/3/2010	3	93	2	Ch	640	greasy
5/3/2010	3	94	2	Ch	640	chewy, CT-like in some places
5/3/2010	3	95	2	Ch	640	I didn't like.
4/26/2010	2	24	2	Ch	867	slightly more tough than I prefer
4/26/2010	2	25	2	Ch	867	it is a little drier than I prefer
4/26/2010	2	26	3	Ch	867	.
4/26/2010	2	27	1	Ch	867	too dry

4/26/2010	2	28	1	Ch	867	not so tender
4/26/2010	2	29	1	Ch	867	.
4/26/2010	2	30	2	Ch	867	too dense
4/26/2010	2	34	3	Ch	867	it was not that tender
4/26/2010	2	35	3	Ch	867	.
4/26/2010	2	36	3	Ch	867	pretty tough
4/26/2010	2	37	3	Ch	867	a bit less tender
4/26/2010	2	38	3	Ch	867	could have been a little less soft
4/26/2010	2	39	1	Ch	867	none
4/26/2010	2	40	1	Ch	867	slightly chewy
4/26/2010	2	41	1	Ch	867	none
4/26/2010	2	42	1	Ch	867	a little gritty
4/26/2010	2	45	2	Ch	867	.
4/26/2010	2	46	2	Ch	867	a bit chewy
4/26/2010	2	47	2	Ch	867	hard to chew
4/26/2010	2	51	3	Ch	867	rubbery
4/26/2010	2	52	3	Ch	867	chewy
4/26/2010	2	53	3	Ch	867	something different about this one
4/26/2010	2	54	3	Ch	867	it stuck together
4/26/2010	2	55	3	Ch	867	still a little too pink for my liking in some parts
4/26/2010	2	56	3	Ch	867	the stickiness
4/26/2010	2	63	3	Ch	867	nothing
4/26/2010	2	64	3	Ch	867	.
4/26/2010	2	65	3	Ch	867	chewy
4/26/2010	2	66	3	Ch	867	nothing
5/3/2010	3	7	2	RM	157	nothing really
5/3/2010	3	43	2	RM	157	.
5/3/2010	3	44	2	RM	157	it was a little dark
5/3/2010	3	48	2	RM	157	n/a
5/3/2010	3	49	2	RM	157	it was chewy and tough
5/3/2010	3	50	2	RM	157	it had the small-hand pellets
5/3/2010	3	57	6	RM	157	.

5/3/2010	3	58	6	RM	157	fat
5/3/2010	3	59	6	RM	157	n/a
5/3/2010	3	60	6	RM	157	slightly chewy
5/3/2010	3	61	6	RM	157	very slight pink color still in meat
5/3/2010	3	62	6	RM	157	can taste the individual pieces of fat/tender because they have different consistency too beef.
5/3/2010	3	67	1	RM	157	nothing really
5/3/2010	3	68	1	RM	157	not really anything
5/3/2010	3	69	1	RM	157	almost too tender
5/3/2010	3	70	1	RM	157	tacky texture. It was like there were small sticky pieces mixed in
5/3/2010	3	71	1	RM	157	variation in compaction (some parts had more air than others)
5/3/2010	3	72	1	RM	157	there was a slight chewiness that caused my teeth to stick together
5/3/2010	3	73	4	RM	157	not a lot
5/3/2010	3	74	4	RM	157	coarsey, dry
5/3/2010	3	75	4	RM	157	a little tough
5/3/2010	3	76	4	RM	157	tough
5/3/2010	3	77	4	RM	157	could feel a few crunchy chunks
5/3/2010	3	78	4	RM	157	nothing
5/3/2010	3	79	2	RM	157	.
5/3/2010	3	80	2	RM	157	.
5/3/2010	3	81	2	RM	157	some grissle
5/3/2010	3	82	6	RM	157	it was moist
5/3/2010	3	83	6	RM	157	n/a
5/3/2010	3	84	6	RM	157	.
5/3/2010	3	85	1	RM	157	made my teeth stick together
5/3/2010	3	86	1	RM	157	nothing
5/3/2010	3	87	1	RM	157	it does seem a little hard to swallow
5/3/2010	3	88	4	RM	157	Too chewy?
5/3/2010	3	89	4	RM	157	.
5/3/2010	3	90	4	RM	157	n/a
5/3/2010	3	91	1	RM	157	the waxy feeling
5/3/2010	3	93	6	RM	157	.

5/3/2010	3	94	6	RM	157	CT again/chewy
5/3/2010	3	95	6	RM	157	not good.
4/26/2010	2	24	4	RM	335	a little dense
4/26/2010	2	25	4	RM	335	almost a little too tough
4/26/2010	2	26	6	RM	335	.
4/26/2010	2	27	2	RM	335	too powdery
4/26/2010	2	28	2	RM	335	.
4/26/2010	2	29	2	RM	335	feels kind of rough
4/26/2010	2	30	4	RM	335	dry
4/26/2010	2	34	6	RM	335	.
4/26/2010	2	35	6	RM	335	crumbly, falls apart
4/26/2010	2	36	5	RM	335	pretty tough and chewy
4/26/2010	2	37	5	RM	335	different from most ground beef
4/26/2010	2	38	5	RM	335	.
4/26/2010	2	39	2	RM	335	too smooth
4/26/2010	2	40	2	RM	335	.
4/26/2010	2	41	2	RM	335	maybe a little slimy
4/26/2010	2	42	2	RM	335	grainy and falls apart easily after chewing
4/26/2010	2	45	4	RM	335	chewy
4/26/2010	2	46	4	RM	335	it was chewy
4/26/2010	2	47	4	RM	335	sticky
4/26/2010	2	51	6	RM	335	weird, color that rubbed off?
4/26/2010	2	52	6	RM	335	chunky bits
4/26/2010	2	53	6	RM	335	.
4/26/2010	2	54	5	RM	335	it was a little dry
4/26/2010	2	55	5	RM	335	nothing
4/26/2010	2	56	5	RM	335	kind of fatty
4/26/2010	2	63	6	RM	335	not very good
4/26/2010	2	64	6	RM	335	.
4/26/2010	2	65	6	RM	335	not very "ground" had same thick particles in it chewy
4/26/2010	2	66	6	RM	335	nothing
4/19/2010	1	1	2	RM	960	.
4/19/2010	1	2	2	RM	960	It feels grainy or chunky. Also it feels like it is stick coating my

						teeth.	
4/19/2010	1	3	2	RM	960	.	
4/19/2010	1	4	2	RM	960	not too much. Good texture	
4/19/2010	1	5	2	RM	960	.	
4/19/2010	1	6	2	RM	960	not consistent	
4/19/2010	1	8	5	RM	960	kind of sticky	
4/19/2010	1	9	5	RM	960	it was almost too mushy, fell apart easily	
4/19/2010	1	10	5	RM	960		0
4/19/2010	1	11	4	RM	960	way too tender	
4/19/2010	1	12	4	RM	960	the middle was too tender and mushy	
4/19/2010	1	13	4	RM	960	.	
4/19/2010	1	14	5	RM	960	.	
4/19/2010	1	15	5	RM	960	very different than other ground beef samples	
4/19/2010	1	16	5	RM	960	nothing	
4/19/2010	1	17	4	RM	960	.	
4/19/2010	1	18	5	RM	960	particle definition was less, but acceptable	
4/19/2010	1	19	5	RM	960	they all look gross	
4/19/2010	1	20	5	RM	960	a little dry after the first bite	
4/19/2010	1	21	6	RM	960	too chewy	
4/19/2010	1	22	6	RM	960	kind of gritty	
4/19/2010	1	23	6	RM	960	.	
4/19/2010	1	31	4	RM	960	it seemed too solid	
4/19/2010	1	32	4	RM	960	it was pretty good	
4/19/2010	1	33	4	RM	960	it was slimy, too tender	

CONSUMER COMMENTS Q12

Date	B	P	Ord	Trt	Code	Q12
						Looks good but it has no taste. It's just plain. Will not buy if you paid me.
5/3/2010	3	7	5	BB	351	Didn't really eat much of it.
5/3/2010	3	43	5	BB	351	.
5/3/2010	3	44	5	BB	351	it was very enjoyable, tasted almost better than some ground beef.
5/3/2010	3	48	5	BB	351	.
5/3/2010	3	49	5	BB	351	this would make a good burger, not at a high-quality level, but for a casual diner or home meal
5/3/2010	3	50	5	BB	351	not that it tasted bad, but it smelled like dog-food
5/3/2010	3	57	5	BB	351	.
5/3/2010	3	58	5	BB	351	sample tasted with more fat texture
5/3/2010	3	59	5	BB	351	nasty aftertaste
5/3/2010	3	60	5	BB	351	this sample and sample #850
5/3/2010	3	61	5	BB	351	needs to be more uniform in flavor and composition
5/3/2010	3	62	5	BB	351	.
5/3/2010	3	67	6	BB	351	by the last patty, your pretty sick of trying them, should break this down to two days
5/3/2010	3	68	6	BB	351	not juicy enough, too dry
5/3/2010	3	69	6	BB	351	.
5/3/2010	3	70	6	BB	351	.
5/3/2010	3	71	6	BB	351	.
5/3/2010	3	72	6	BB	351	there was a big piece of raw meat in the sample
5/3/2010	3	73	6	BB	351	.
5/3/2010	3	74	6	BB	351	.
5/3/2010	3	75	6	BB	351	.
5/3/2010	3	76	6	BB	351	.
5/3/2010	3	77	6	BB	351	yummy aroma. Very greasy feel in mouth
5/3/2010	3	78	6	BB	351	.
5/3/2010	3	79	5	BB	351	.
5/3/2010	3	80	5	BB	351	.
5/3/2010	3	81	5	BB	351	.

5/3/2010	3	82	5	BB	351	didn't like
5/3/2010	3	83	5	BB	351	.
5/3/2010	3	84	5	BB	351	.
5/3/2010	3	85	6	BB	351	
5/3/2010	3	86	6	BB	351	.
5/3/2010	3	87	6	BB	351	this had a lot of flavor, but had little quality in the tenderness of the beef
5/3/2010	3	88	6	BB	351	.
5/3/2010	3	89	6	BB	351	.
5/3/2010	3	90	6	BB	351	.
5/3/2010	3	91	6	BB	351	.
5/3/2010	3	93	5	BB	351	.
5/3/2010	3	94	5	BB	351	.
5/3/2010	3	95	5	BB	351	.
4/19/2010	1	1	5	BB	384	.
4/19/2010	1	2	5	BB	384	It looks almost solid, very dense, but breaks apart easily.
4/19/2010	1	3	5	BB	384	.
4/19/2010	1	4	5	BB	384	.
4/19/2010	1	5	5	BB	384	.
4/19/2010	1	6	5	BB	384	.
4/19/2010	1	8	4	BB	384	lacks color and texture
4/19/2010	1	9	4	BB	384	.
4/19/2010	1	10	4	BB	384	lacked overall flavor, dull
4/19/2010	1	11	2	BB	384	strong odor
4/19/2010	1	12	2	BB	384	bland, not very juicy, was tender enough though, still would not buy
4/19/2010	1	13	2	BB	384	.
4/19/2010	1	14	4	BB	384	didn't like this one
4/19/2010	1	15	4	BB	384	.
4/19/2010	1	16	4	BB	384	n/a
4/19/2010	1	17	2	BB	384	a little bit greasy and bloody
4/19/2010	1	18	4	BB	384	.
4/19/2010	1	19	4	BB	384	.
4/19/2010	1	20	4	BB	384	.
4/19/2010	1	21	5	BB	384	.

						little firmer and less "ground beef" than usual but actually very tasty and
4/19/2010	1	22	5	BB	384	great texture
4/19/2010	1	23	5	BB	384	.
4/19/2010	1	31	2	BB	384	.
4/19/2010	1	32	2	BB	384	.
4/19/2010	1	33	2	BB	384	.
4/26/2010	2	24	1	BB	413	.
4/26/2010	2	25	1	BB	413	.
4/26/2010	2	26	5	BB	413	.
4/26/2010	2	27	5	BB	413	.
4/26/2010	2	28	5	BB	413	.
4/26/2010	2	29	5	BB	413	.
4/26/2010	2	30	1	BB	413	love the moistness
4/26/2010	2	34	5	BB	413	.
4/26/2010	2	35	5	BB	413	meat is pink, might need more cooking time
4/26/2010	2	36	4	BB	413	.
4/26/2010	2	37	4	BB	413	.
4/26/2010	2	38	4	BB	413	.
4/26/2010	2	39	5	BB	413	smells bad, similar to alpo wet dog food, but not as strong
4/26/2010	2	40	5	BB	413	.
4/26/2010	2	41	5	BB	413	best color out of all the others
4/26/2010	2	42	5	BB	413	I love the full flavor, but did not like the texture of this sample
4/26/2010	2	45	1	BB	413	.
						overall tasted like a hamburger I would eat. Don't much care for the look.
4/26/2010	2	46	1	BB	413	Taste is better than texture.
4/26/2010	2	47	1	BB	413	.
4/26/2010	2	51	5	BB	413	wouldn't describe this as juicy and flavor definitely wasn't good
4/26/2010	2	52	5	BB	413	none
4/26/2010	2	53	5	BB	413	.
4/26/2010	2	54	4	BB	413	it did not taste like regular ground beef
4/26/2010	2	55	4	BB	413	NA
4/26/2010	2	56	4	BB	413	.
4/26/2010	2	63	5	BB	413	I would eat it again.

4/26/2010	2	64	5	BB	413	.
4/26/2010	2	65	5	BB	413	n/a
4/26/2010	2	66	5	BB	413	very juicy, great flavor, would have liked outside of meat to have more brown color
4/26/2010	2	24	5	BTS	276	.
4/26/2010	2	25	5	BTS	276	.
4/26/2010	2	26	4	BTS	276	.
4/26/2010	2	27	4	BTS	276	.
4/26/2010	2	28	4	BTS	276	.
4/26/2010	2	29	4	BTS	276	.
4/26/2010	2	30	5	BTS	276	.
4/26/2010	2	34	4	BTS	276	.
4/26/2010	2	35	4	BTS	276	seems low quality
4/26/2010	2	36	1	BTS	276	.
4/26/2010	2	37	1	BTS	276	.
4/26/2010	2	38	1	BTS	276	.
4/26/2010	2	39	4	BTS	276	this one smelled the best so far.
4/26/2010	2	40	4	BTS	276	.
4/26/2010	2	41	4	BTS	276	color looks like normal, leaves a bit of a bad aftertaste
4/26/2010	2	42	4	BTS	276	best sample yet, would definitely eat at home, not as grainy, does not break up in mouth so much after first bite
4/26/2010	2	45	5	BTS	276	.
4/26/2010	2	46	5	BTS	276	the fact that the intensity of the flavor wasn't very high; may actually be good; because if the intensity were higher in flavor, I may have disliked product 276
4/26/2010	2	47	5	BTS	276	.
4/26/2010	2	51	4	BTS	276	this was the dryest so far
4/26/2010	2	52	4	BTS	276	none
4/26/2010	2	53	4	BTS	276	.
4/26/2010	2	54	1	BTS	276	it tasted like most ground beef I have tried but did not have as strong of a flavor
4/26/2010	2	55	1	BTS	276	NA

4/26/2010	2	56	1	BTS	276	.
4/26/2010	2	63	4	BTS	276	not my favorite, I wouldn't eat it unless it was impolite to do so
4/26/2010	2	64	4	BTS	276	.
4/26/2010	2	65	4	BTS	276	n/a
4/26/2010	2	66	4	BTS	276	meat very tasty, color could have been less pink and more brown on the outside
5/3/2010	3	7	6	BTS	850	Overall love the taste, and the way it looks. Very good. I'll buy it.
5/3/2010	3	43	6	BTS	850	.
5/3/2010	3	44	6	BTS	850	.
5/3/2010	3	48	6	BTS	850	.
5/3/2010	3	49	6	BTS	850	not good at all.
5/3/2010	3	50	6	BTS	850	.
5/3/2010	3	57	1	BTS	850	.
5/3/2010	3	58	1	BTS	850	colding was not as pleasing
5/3/2010	3	59	1	BTS	850	n/a
5/3/2010	3	60	1	BTS	850	.
5/3/2010	3	61	1	BTS	850	good choice of meat sample
5/3/2010	3	62	1	BTS	850	.
5/3/2010	3	67	3	BTS	850	.
5/3/2010	3	68	3	BTS	850	it was alright
5/3/2010	3	69	3	BTS	850	.
5/3/2010	3	70	3	BTS	850	.
5/3/2010	3	71	3	BTS	850	black specks were visible
5/3/2010	3	72	3	BTS	850	.
5/3/2010	3	73	2	BTS	850	.
5/3/2010	3	74	2	BTS	850	.
5/3/2010	3	75	2	BTS	850	.
5/3/2010	3	76	2	BTS	850	.
5/3/2010	3	77	2	BTS	850	.
5/3/2010	3	78	2	BTS	850	.
5/3/2010	3	79	6	BTS	850	.
5/3/2010	3	80	6	BTS	850	.
5/3/2010	3	81	6	BTS	850	.

5/3/2010	3	82	1	BTS	850	overall this was a good sample of ground beef.
5/3/2010	3	83	1	BTS	850	lots of black specks in the patties
5/3/2010	3	84	1	BTS	850	.
5/3/2010	3	85	3	BTS	850	.
5/3/2010	3	86	3	BTS	850	.
5/3/2010	3	87	3	BTS	850	I really would think something might be wrong with this if I were to order it at a restaurant
5/3/2010	3	88	2	BTS	850	.
5/3/2010	3	89	2	BTS	850	.
5/3/2010	3	90	2	BTS	850	.
5/3/2010	3	91	3	BTS	850	.
5/3/2010	3	93	1	BTS	850	.
5/3/2010	3	94	1	BTS	850	.
5/3/2010	3	95	1	BTS	850	.
4/19/2010	1	1	4	BTS	977	overall taste and texture extremely similar to ground beef
4/19/2010	1	2	4	BTS	977	You can see the oil or fat or whatever is in this meat and even if it is good for you, which I don't know if it is or not, it looks like grease, which is off putting, also the color was almost purplish, which is odd.
4/19/2010	1	3	4	BTS	977	.
4/19/2010	1	4	4	BTS	977	.
4/19/2010	1	5	4	BTS	977	Perfect texture, just needs better flavor.
4/19/2010	1	6	4	BTS	977	great, color didn't look great though
4/19/2010	1	8	1	BTS	977	.
4/19/2010	1	9	1	BTS	977	.
4/19/2010	1	10	1	BTS	977	.
4/19/2010	1	11	3	BTS	977	did not tast like normal meat
4/19/2010	1	12	3	BTS	977	it was juicy, but in a watery sort of way, would not eat
4/19/2010	1	13	3	BTS	977	.
4/19/2010	1	14	1	BTS	977	.
4/19/2010	1	15	1	BTS	977	just too dry and bland
4/19/2010	1	16	1	BTS	977	n/a
4/19/2010	1	17	3	BTS	977	flavor not purely beef, kind of not like the other flavors
4/19/2010	1	18	1	BTS	977	.

4/19/2010	1	19	1	BTS	977	there wasn't a destinct flavor but definitely saleable
4/19/2010	1	20	1	BTS	977	.
4/19/2010	1	21	4	BTS	977	.
4/19/2010	1	22	4	BTS	977	very juicy, very tasty, not a whole lot of flavor and tasted some fat, but pretty good
4/19/2010	1	23	4	BTS	977	.
4/19/2010	1	31	3	BTS	977	.
4/19/2010	1	32	3	BTS	977	.
4/19/2010	1	33	3	BTS	977	.
4/19/2010	1	1	3	C	501	.
4/19/2010	1	2	3	C	501	You can smell the beef in this, and it looks more like beef and not only fat.
4/19/2010	1	3	3	C	501	.
4/19/2010	1	4	3	C	501	.
4/19/2010	1	5	3	C	501	.
4/19/2010	1	6	3	C	501	.
4/19/2010	1	8	2	C	501	.
4/19/2010	1	9	2	C	501	.
4/19/2010	1	10	2	C	501	it was juicy, but it lacked flavor
4/19/2010	1	11	6	C	501	good, a little chewy
4/19/2010	1	12	6	C	501	didn't like, needs seasoning/any kind of flavor would be better
4/19/2010	1	13	6	C	501	.
4/19/2010	1	14	2	C	501	didn't like it
4/19/2010	1	15	2	C	501	.
4/19/2010	1	16	2	C	501	n/a
4/19/2010	1	17	6	C	501	a little bit pale than normal beef patties
4/19/2010	1	18	2	C	501	product was served hotter than 977
4/19/2010	1	19	2	C	501	tasted same as first sample
4/19/2010	1	20	2	C	501	.
4/19/2010	1	21	2	C	501	.
4/19/2010	1	22	2	C	501	kind of sour and had to force it down to swallow
4/19/2010	1	23	2	C	501	.
4/19/2010	1	31	6	C	501	.

4/19/2010	1	32	6	C	501	.
4/19/2010	1	33	6	C	501	.
4/26/2010	2	24	3	C	646	.
4/26/2010	2	25	3	C	646	my favorite
4/26/2010	2	26	2	C	646	.
4/26/2010	2	27	3	C	646	.
4/26/2010	2	28	3	C	646	.
4/26/2010	2	29	3	C	646	.
4/26/2010	2	30	3	C	646	.
4/26/2010	2	34	2	C	646	.
4/26/2010	2	35	2	C	646	meat a tad bit undercooked, may have hindered liking of product
4/26/2010	2	36	2	C	646	.
4/26/2010	2	37	2	C	646	.
4/26/2010	2	38	2	C	646	appearance was not appetising either looked too chewy from just the presentation
4/26/2010	2	39	3	C	646	.
4/26/2010	2	40	3	C	646	.
4/26/2010	2	41	3	C	646	the color was light on the inside more so than usual
4/26/2010	2	42	3	C	646	would eat at home preferred over all samples thus far
4/26/2010	2	45	3	C	646	.
4/26/2010	2	46	3	C	646	good look. Very juicy; but tenderness and being bland contributes to my dislike of product 646
4/26/2010	2	47	3	C	646	.
4/26/2010	2	51	2	C	646	I just didn't like the taste gave bad after flavor and more rubbery than the last
4/26/2010	2	52	2	C	646	none
4/26/2010	2	53	2	C	646	.
4/26/2010	2	54	2	C	646	it was difficult to eat, but tasted good
4/26/2010	2	55	2	C	646	NA
4/26/2010	2	56	2	C	646	.
4/26/2010	2	63	2	C	646	I didn't want to eat more than a bite.
4/26/2010	2	64	2	C	646	.
4/26/2010	2	65	2	C	646	seems too red in the middle for my preference

4/26/2010	2	66	2	C	646	.
5/3/2010	3	7	3	C	837	Even if it looked like something that was gross. It was really good. Almost ate most of it.
5/3/2010	3	43	3	C	837	.
5/3/2010	3	44	3	C	837	tasted like actual ground beef. Best so far.
5/3/2010	3	48	3	C	837	.
5/3/2010	3	49	3	C	837	overall nothing more than average would not pay much for this burger
5/3/2010	3	50	3	C	837	looked like it was in 2 layers
5/3/2010	3	57	3	C	837	.
5/3/2010	3	58	3	C	837	did not like the appearance
5/3/2010	3	59	3	C	837	good!
5/3/2010	3	60	3	C	837	somewhat juicy and tender, but I didn't personally care for it.
5/3/2010	3	61	3	C	837	needs more dark brown look distributed evenly throughout the meat sample. Aftertaste was unpleasant and hard to get rid of and the fat I was chewing on.
5/3/2010	3	62	3	C	837	.
5/3/2010	3	67	5	C	837	.
5/3/2010	3	68	5	C	837	didn't look as appealing
5/3/2010	3	69	5	C	837	.
5/3/2010	3	70	5	C	837	.
5/3/2010	3	71	5	C	837	.
5/3/2010	3	72	5	C	837	.
5/3/2010	3	73	1	C	837	.
5/3/2010	3	74	1	C	837	.
5/3/2010	3	75	1	C	837	not bad!
5/3/2010	3	76	1	C	837	.
5/3/2010	3	77	1	C	837	.
5/3/2010	3	78	1	C	837	.
5/3/2010	3	79	3	C	837	pleasant beefy aroma
5/3/2010	3	80	3	C	837	.
5/3/2010	3	81	3	C	837	.
5/3/2010	3	82	3	C	837	it was not that good.
5/3/2010	3	83	3	C	837	less juicy less fat coating

5/3/2010	3	84	3	C	837	.
5/3/2010	3	85	5	C	837	.
5/3/2010	3	86	5	C	837	.
5/3/2010	3	87	5	C	837	this doesn't really even taste like beef, ought to taste.
5/3/2010	3	88	1	C	837	.
5/3/2010	3	89	1	C	837	.
5/3/2010	3	90	1	C	837	.
5/3/2010	3	91	5	C	837	my favorite
5/3/2010	3	93	3	C	837	.
5/3/2010	3	94	3	C	837	CT, I can see it :(
5/3/2010	3	95	3	C	837	.
5/3/2010	3	7	1	CG	470	you could hear the juice when I bite into it. Over all did not like. Ate some.
5/3/2010	3	43	1	CG	470	.
5/3/2010	3	44	1	CG	470	.
5/3/2010	3	48	1	CG	470	.
5/3/2010	3	49	1	CG	470	I liked the sample, with seasoning I think it could be a great burger. Tastes like good quality
5/3/2010	3	50	1	CG	470	I liked the thickness of the patty
5/3/2010	3	57	4	CG	470	some stuck to my mouth after swallowing, slimy afterward
5/3/2010	3	58	4	CG	470	nice apearance :) like this sample in comparison to ground beef
5/3/2010	3	59	4	CG	470	:(
5/3/2010	3	60	4	CG	470	was pretty juicy and tender, but no flavor
5/3/2010	3	61	4	CG	470	basic look to meat with a faint brown look to it. Tasted like a sample of meatloaf and not the taste of a meat that I would eat normally because it lacks an authentic taste.
5/3/2010	3	62	4	CG	470	.
5/3/2010	3	67	4	CG	470	tasted like cheap hamburger meat
5/3/2010	3	68	4	CG	470	very bland, not my favorite
5/3/2010	3	69	4	CG	470	.
5/3/2010	3	70	4	CG	470	.
5/3/2010	3	71	4	CG	470	the gritty texture is very noticable
5/3/2010	3	72	4	CG	470	.

5/3/2010	3	73	3	CG	470	.
5/3/2010	3	74	3	CG	470	.
5/3/2010	3	75	3	CG	470	.
5/3/2010	3	76	3	CG	470	.
5/3/2010	3	77	3	CG	470	definitely edible
5/3/2010	3	78	3	CG	470	.
5/3/2010	3	79	1	CG	470	.
5/3/2010	3	80	1	CG	470	.
5/3/2010	3	81	1	CG	470	.
5/3/2010	3	82	4	CG	470	disliked overall
5/3/2010	3	83	4	CG	470	n/a
5/3/2010	3	84	4	CG	470	.
5/3/2010	3	85	4	CG	470	.
5/3/2010	3	86	4	CG	470	.
5/3/2010	3	87	4	CG	470	I would eat this all the time. Well done.
5/3/2010	3	88	3	CG	470	.
5/3/2010	3	89	3	CG	470	.
5/3/2010	3	90	3	CG	470	.
5/3/2010	3	91	4	CG	470	this sample did not look as nice as the others. My least favorite
5/3/2010	3	93	4	CG	470	.
5/3/2010	3	94	4	CG	470	.
5/3/2010	3	95	4	CG	470	.
4/19/2010	1	1	6	CG	477	.
4/19/2010	1	2	6	CG	477	You can see the chunks of fat. I really did not like this one.
4/19/2010	1	3	6	CG	477	.
4/19/2010	1	4	6	CG	477	.
4/19/2010	1	5	6	CG	477	.
4/19/2010	1	6	6	CG	477	.
4/19/2010	1	8	6	CG	477	it feels likt I'm popping somethingin my mouth when I chew
4/19/2010	1	9	6	CG	477	.
4/19/2010	1	10	6	CG	477	liked this one, flavorful and juicy
4/19/2010	1	11	5	CG	477	good taste, just a little dry
4/19/2010	1	12	5	CG	477	good! This has been my favorite so far, seasoned enough to where I would

						buy it - sometimes. Was not too tender or wet.
4/19/2010	1	13	5	CG	477	.
4/19/2010	1	14	6	CG	477	color was good
4/19/2010	1	15	6	CG	477	.
4/19/2010	1	16	6	CG	477	n/a
4/19/2010	1	17	5	CG	477	grittiness when chewing
4/19/2010	1	18	6	CG	477	all samples were served at constant temperature, except first, it was cold
4/19/2010	1	19	6	CG	477	.
4/19/2010	1	20	6	CG	477	.
4/19/2010	1	21	1	CG	477	.
4/19/2010	1	22	1	CG	477	overall okay, juicy and moist, but kind of gritty and lacked flavor
4/19/2010	1	23	1	CG	477	.
4/19/2010	1	31	5	CG	477	liked it
4/19/2010	1	32	5	CG	477	the temperature on this one was significantly better than the previous four
4/19/2010	1	33	5	CG	477	.
4/26/2010	2	24	6	CG	530	.
4/26/2010	2	25	6	CG	530	.
4/26/2010	2	26	1	CG	530	.
4/26/2010	2	27	6	CG	530	.
4/26/2010	2	28	6	CG	530	.
4/26/2010	2	29	6	CG	530	.
4/26/2010	2	30	6	CG	530	.
4/26/2010	2	34	1	CG	530	.
4/26/2010	2	35	1	CG	530	.
4/26/2010	2	36	6	CG	530	.
4/26/2010	2	37	6	CG	530	.
4/26/2010	2	38	6	CG	530	most like ground beef I have had - great sample
4/26/2010	2	39	6	CG	530	had crunchy bits in it, smelled bad, pepper taste
4/26/2010	2	40	6	CG	530	.
4/26/2010	2	41	6	CG	530	.
4/26/2010	2	42	6	CG	530	did not like this samle, too dry
4/26/2010	2	45	6	CG	530	.
4/26/2010	2	46	6	CG	530	terrible texture contributed to my dislike of product 530

4/26/2010	2	47	6	CG	530	.
4/26/2010	2	51	1	CG	530	it was very juicy and tasted like normal beef
4/26/2010	2	52	1	CG	530	none
4/26/2010	2	53	1	CG	530	looked very good, just taste was dull
4/26/2010	2	54	6	CG	530	it began with a familiar taste, but was unpleasant after eating it
4/26/2010	2	55	6	CG	530	NA
4/26/2010	2	56	6	CG	530	.
4/26/2010	2	63	1	CG	530	I liked the temperature of the meat. If it was any cooler I may not have liked it
4/26/2010	2	64	1	CG	530	.
4/26/2010	2	65	1	CG	530	needs more flavor
4/26/2010	2	66	1	CG	530	overall it was very tasty it could have used more seasoning if allowed
4/19/2010	1	1	1	Ch	139	seemed more greasy than juicy
4/19/2010	1	2	1	Ch	139	The flavor is fairly strong but it is all beef flavor and no spices or other flavor.
4/19/2010	1	3	1	Ch	139	.
4/19/2010	1	4	1	Ch	139	.
4/19/2010	1	5	1	Ch	139	.
4/19/2010	1	6	1	Ch	139	.
4/19/2010	1	8	3	Ch	139	seemed a little greasier than past samples
4/19/2010	1	9	3	Ch	139	.
4/19/2010	1	10	3	Ch	139	liked texture and flavor, but not juicy, so took away from overall taste
4/19/2010	1	11	1	Ch	139	.
4/19/2010	1	12	1	Ch	139	too mush like, but was all right, would not eat normally though
4/19/2010	1	13	1	Ch	139	.
4/19/2010	1	14	3	Ch	139	I was pleased
4/19/2010	1	15	3	Ch	139	very bland
4/19/2010	1	16	3	Ch	139	n/a
4/19/2010	1	17	1	Ch	139	it's not greasy, which is good.
4/19/2010	1	18	3	Ch	139	.
4/19/2010	1	19	3	Ch	139	.
4/19/2010	1	20	3	Ch	139	.

4/19/2010	1	21	3	Ch	139	.
4/19/2010	1	22	3	Ch	139	tasted like traditional ground beef, would have liked more flavor and less fat
4/19/2010	1	23	3	Ch	139	.
4/19/2010	1	31	1	Ch	139	I liked it
4/19/2010	1	32	1	Ch	139	.
4/19/2010	1	33	1	Ch	139	.
						I love the juicy taste. It looks good and tastes good. I would buy it.
5/3/2010	3	7	4	Ch	640	Almost ate all of it.
5/3/2010	3	43	4	Ch	640	All factors combine - this is a good combo
5/3/2010	3	44	4	Ch	640	.
5/3/2010	3	48	4	Ch	640	.
5/3/2010	3	49	4	Ch	640	tastes old and extremely low quality
5/3/2010	3	50	4	Ch	640	.
5/3/2010	3	57	2	Ch	640	.
5/3/2010	3	58	2	Ch	640	.
5/3/2010	3	59	2	Ch	640	n/a
5/3/2010	3	60	2	Ch	640	.
5/3/2010	3	61	2	Ch	640	good at first, but unpleasant aftertaste and needs less pink inside of meat
5/3/2010	3	62	2	Ch	640	.
5/3/2010	3	67	2	Ch	640	kind of reminds me of a steak-n-ale chop steak
5/3/2010	3	68	2	Ch	640	liked the more juiciness but there was a hair in my sample
5/3/2010	3	69	2	Ch	640	.
5/3/2010	3	70	2	Ch	640	.
5/3/2010	3	71	2	Ch	640	.
5/3/2010	3	72	2	Ch	640	.
5/3/2010	3	73	5	Ch	640	it looked weird
5/3/2010	3	74	5	Ch	640	.
5/3/2010	3	75	5	Ch	640	.
5/3/2010	3	76	5	Ch	640	.
5/3/2010	3	77	5	Ch	640	strongest aroma I've noticed
5/3/2010	3	78	5	Ch	640	.
5/3/2010	3	79	4	Ch	640	uneven packing of patties seems to make some samples more desirable
5/3/2010	3	80	4	Ch	640	.

5/3/2010	3	81	4	Ch	640	.
5/3/2010	3	82	2	Ch	640	it was not that juicy
5/3/2010	3	83	2	Ch	640	not as juicy. More fat coating mouth
5/3/2010	3	84	2	Ch	640	.
5/3/2010	3	85	2	Ch	640	.
5/3/2010	3	86	2	Ch	640	.
5/3/2010	3	87	2	Ch	640	this meat seemed to be hard to swallow down and to chew
5/3/2010	3	88	5	Ch	640	.
5/3/2010	3	89	5	Ch	640	.
5/3/2010	3	90	5	Ch	640	very hot, not sure of my evaluation due to the inability to taste
5/3/2010	3	91	2	Ch	640	.
5/3/2010	3	93	2	Ch	640	.
5/3/2010	3	94	2	Ch	640	.
5/3/2010	3	95	2	Ch	640	I didn't like this sample
4/26/2010	2	24	2	Ch	867	.
4/26/2010	2	25	2	Ch	867	.
4/26/2010	2	26	3	Ch	867	.
4/26/2010	2	27	1	Ch	867	.
4/26/2010	2	28	1	Ch	867	.
4/26/2010	2	29	1	Ch	867	.
4/26/2010	2	30	2	Ch	867	.
4/26/2010	2	34	3	Ch	867	.
4/26/2010	2	35	3	Ch	867	seemed greasy
4/26/2010	2	36	3	Ch	867	.
4/26/2010	2	37	3	Ch	867	.
4/26/2010	2	38	3	Ch	867	.
4/26/2010	2	39	1	Ch	867	.
4/26/2010	2	40	1	Ch	867	.
4/26/2010	2	41	1	Ch	867	.
4/26/2010	2	42	1	Ch	867	I would eat this sample if provided to me at home
4/26/2010	2	45	2	Ch	867	.
4/26/2010	2	46	2	Ch	867	color is good, look is good
4/26/2010	2	47	2	Ch	867	.

4/26/2010	2	51	3	Ch	867	it did have a certain juiciness, definitely not dry, but terrible aftertaste
4/26/2010	2	52	3	Ch	867	none
4/26/2010	2	53	3	Ch	867	.
4/26/2010	2	54	3	Ch	867	it had a good beginning taste, but was not good to the end
4/26/2010	2	55	3	Ch	867	best so far
4/26/2010	2	56	3	Ch	867	.
4/26/2010	2	63	3	Ch	867	it was too hot (temperature)
4/26/2010	2	64	3	Ch	867	.
4/26/2010	2	65	3	Ch	867	like more than the other previous samples
4/26/2010	2	66	3	Ch	867	the meat was very tasty, no weird after taste. The way the meat was cooked was very appealing to the eye (browning on outside).
5/3/2010	3	7	2	RM	157	little rubbery in some spots. Over all pretty good. Ate most of it.
5/3/2010	3	43	2	RM	157	.
5/3/2010	3	44	2	RM	157	.
5/3/2010	3	48	2	RM	157	.
5/3/2010	3	49	2	RM	157	leaves a bad aftertaste
5/3/2010	3	50	2	RM	157	.
5/3/2010	3	57	6	RM	157	I didn't want to try another bite, reminded me of dog food
5/3/2010	3	58	6	RM	157	the flavor in this sample did not taste typical to ground beef patties
5/3/2010	3	59	6	RM	157	not too bad
5/3/2010	3	60	6	RM	157	.
5/3/2010	3	61	6	RM	157	good flavor for meat sample that was uncharacteristic when chewing
5/3/2010	3	62	6	RM	157	.
5/3/2010	3	67	1	RM	157	.
5/3/2010	3	68	1	RM	157	better than expected
5/3/2010	3	69	1	RM	157	.
5/3/2010	3	70	1	RM	157	.
5/3/2010	3	71	1	RM	157	.
5/3/2010	3	72	1	RM	157	.
5/3/2010	3	73	4	RM	157	.
5/3/2010	3	74	4	RM	157	.
5/3/2010	3	75	4	RM	157	.

5/3/2010	3	76	4	RM	157	.
5/3/2010	3	77	4	RM	157	not a normal flavor but interesting. Not a bad flavor either. I found a little hair in the patty.
5/3/2010	3	78	4	RM	157	maybe slightly dryer?
5/3/2010	3	79	2	RM	157	.
5/3/2010	3	80	2	RM	157	.
5/3/2010	3	81	2	RM	157	.
5/3/2010	3	82	6	RM	157	I didn't like how it taste but I did like the texture.
5/3/2010	3	83	6	RM	157	n/a
5/3/2010	3	84	6	RM	157	.
5/3/2010	3	85	1	RM	157	.
5/3/2010	3	86	1	RM	157	.
5/3/2010	3	87	1	RM	157	it seems to be very tasteful to a healthier tastier but I can see it being too healthy tasting for the masses.
5/3/2010	3	88	4	RM	157	didn't like the flavor at all.
5/3/2010	3	89	4	RM	157	.
5/3/2010	3	90	4	RM	157	.
5/3/2010	3	91	1	RM	157	there was a strange piece of something in mine?
5/3/2010	3	93	6	RM	157	.
5/3/2010	3	94	6	RM	157	.
5/3/2010	3	95	6	RM	157	.
4/26/2010	2	24	4	RM	335	.
4/26/2010	2	25	4	RM	335	at first I didn't like it but it grew on me with my second bite
4/26/2010	2	26	6	RM	335	.
4/26/2010	2	27	2	RM	335	way too dry
4/26/2010	2	28	2	RM	335	.
4/26/2010	2	29	2	RM	335	.
4/26/2010	2	30	4	RM	335	.
4/26/2010	2	34	6	RM	335	this one was kind of spongey as far as texture goes
4/26/2010	2	35	6	RM	335	.
4/26/2010	2	36	5	RM	335	.
4/26/2010	2	37	5	RM	335	.
4/26/2010	2	38	5	RM	335	.

4/26/2010	2	39	2	RM	335	it smells like wet dog food
4/26/2010	2	40	2	RM	335	.
4/26/2010	2	41	2	RM	335	the color was a little weird
4/26/2010	2	42	2	RM	335	like sample 867 better but would still eat this at home
4/26/2010	2	45	4	RM	335	.
4/26/2010	2	46	4	RM	335	I would not buy test sample 335; juicy yet the flavor is strong and not for my liking
4/26/2010	2	47	4	RM	335	.
4/26/2010	2	51	6	RM	335	.
4/26/2010	2	52	6	RM	335	none
4/26/2010	2	53	6	RM	335	.
4/26/2010	2	54	5	RM	335	it tasted like it was seasoned and had the best taste
4/26/2010	2	55	5	RM	335	NA
4/26/2010	2	56	5	RM	335	.
4/26/2010	2	63	6	RM	335	my least favorite. I wouldn't eat it even if it was impolite. (why did this have to be my last sample?!)
4/26/2010	2	64	6	RM	335	.
4/26/2010	2	65	6	RM	335	n/a
4/26/2010	2	66	6	RM	335	it had a weird smell and taste
4/19/2010	1	1	2	RM	960	.
4/19/2010	1	2	2	RM	960	it taste like normal fast food. It smelled like additives. The meat looked fatty.
4/19/2010	1	3	2	RM	960	.
4/19/2010	1	4	2	RM	960	.
4/19/2010	1	5	2	RM	960	The tenderness and texture of the sample was great! With a little more flavor, I think it would be perfect!
4/19/2010	1	6	2	RM	960	.
4/19/2010	1	8	5	RM	960	leaves a weird taste on your mouth
4/19/2010	1	9	5	RM	960	.
4/19/2010	1	10	5	RM	960	not much flavor, left a weird taste in my mouth
4/19/2010	1	11	4	RM	960	did not like texture, falling apart
4/19/2010	1	12	4	RM	960	the middle tasted wet/watery and not cooked all the way through
4/19/2010	1	13	4	RM	960	.

4/19/2010	1	14	5	RM	960	the color wasn't as dark
4/19/2010	1	15	5	RM	960	.
4/19/2010	1	16	5	RM	960	.
4/19/2010	1	17	4	RM	960	pale, not like beef products
4/19/2010	1	18	5	RM	960	.
4/19/2010	1	19	5	RM	960	.
4/19/2010	1	20	5	RM	960	.
4/19/2010	1	21	6	RM	960	.
4/19/2010	1	22	6	RM	960	best sample, kind of gritty, but really liked the taste
4/19/2010	1	23	6	RM	960	.
4/19/2010	1	31	4	RM	960	I didn't really like this one
4/19/2010	1	32	4	RM	960	.
4/19/2010	1	33	4	RM	960	.

APPENDIX E

COLOR REFERENCE

Color	Score	Brand	Name	Card #	Color #
Red	8	Sherwin-Williams	Resounding Rose	46	SW 6318
Red	7	Sherwin-Williams	Coral Reef	87	SW 6606
Red	6	Sherwin-Williams	Ablaze	128	SW 6870
Red	5	Sherwin-Williams	Red Tomato	87	SW 6607
Red	4	Sherwin-Williams	Positive Red	128	SW 6871
Red	3	Sherwin-Williams	Red Bay	46	SW 6321
Red	2	Sherwin-Williams	Luxurious Red	45	SW 6314
Red	1	Sherwin-Williams	Flower Pot	48	SW 6334
Brown	1	Sherwin-Williams	Truly Taupe	6	SW 6038
Brown	2	Sherwin-Williams	Interface Tan	9	SW 6059
Brown	3	Sherwin-Williams	Moraccan Brown	9	SW 6060
Brown	4	Sherwin-Williams	Mocha	10	SW 6067
Brown	5	Sherwin-Williams	Jute Brown	14	SW 6096

APPENDIX F

CONSUMER SENSORY BALLOT

CONSUMER STUDY

DATE _____

INSTRUCTIONS

PANELIST NO. _____

Thank you for your participation in this study. Your assistance is very much appreciated.

The objective of this study is to evaluate new meat products. Please take your time and evaluate the samples given to you carefully. Please proceed at your own rate.

This sampling will take you between 15 to 20 minutes.

Please answer the following questions as completely as possible. If you have any questions, please ask the monitor for assistance.

Begin by filling out the basic demographic questions on the first page. This information is confidential and will not be used to solicit advertising nor will this information be published with your name associated with it.

After filling out the demographic information you are ready to start the evaluation.

BOLD LETTERS throughout the questionnaire will give you directions on how to complete the evaluation.

Thank you very much for your help and opinions.

PANELIST DEMOGRAPHIC INFORMATION

FILL OUT THE FOLLOWING INFORMATION.

1. Please indicate your age by marking the appropriate blank:

   _____ Under 20 years _____ 30-39 years _____ 50-59 years

   _____ 20-29 years _____ 40-49 years _____ 60 years or older

2. Please indicate your income (combined income if both you and your spouse are employed) by marking the appropriate blank:

   _____ Under $20,000 _____ $30,000-$$39,000 _____ $50,000-$59,000

   _____ $20,000-$29,000 _____ $40,000-$49,000 _____ $60,000 or more

3. Please indicate your household size, including yourself:

   _____ 1 _____ 3 _____ 5

   _____ 2 _____ 4 _____ 6 or greater

4. Please indicate your current working status:

   _____ Not employed _____ Part-time

   _____ Full-time _____ Student

5. Please indicate your sex:

   _____ Male _____ Female

6. Please indicate your ethnic background:

   _____ White _____ Black _____ Hispanic

   _____ American Indian _____ Asian or Pacific Islander

DIRECTIONS

YOU WILL BE EVALUATING THE SENSORY PROPERTIES OF DIFFERENT GROUND BEEF PRODUCTS.

ANSWER QUESTIONS 1 THROUGH 12 FOR EACH SAMPLE THAT YOU ARE SERVED.

EACH PRODUCT WILL HAVE A NUMBER DESIGNATION ON THE CONTAINER THAT IT IS SERVED IN. PLEASE IDENTIFY THE NUMBER ON EACH SAMPLE AS IT IS SERVED AND MAKE SURE THAT THE NUMBER ON THE SAMPLE MATCHES THE NUMBER ON THE TOP OF THE PAGE OF THE BALLOT.

LET YOUR MONITOR KNOW WHEN YOU WANT TO BEGIN.

PRIOR TO TASTING EACH SAMPLE, PLEASE TAKE A BITE OF THE CRACKER AND THEN RINSE WITH THE WATER PROVIDED IN THE CUP.

NOW, TASTE THE MEAT IN THE PORTION CUP AND ANSWER THE QUESTIONS.

SAMPLE NUMBER _____

1. Indicate by placing a mark in the box your **OVERALL LIKE/DISLIKE** of this sample.

2. Indicate by placing a mark in the box your **OVERALL LIKE/DISLIKE** for the **FLAVOR** of this sample.

3. Indicate by placing a mark in the box how you feel about the **INTENSITY OF THE FLAVOR** of this sample.

NONE OR EXTREMELY BLAND

EXTREMELY INTENSE

4. What did you **LIKE** about the **FLAVOR** of this sample?

_____

_____

5. What did you **DISLIKE** about the **FLAVOR** of this sample?

_____

_____

6. Indicate by placing a mark in the box your **OVERALL LIKE/DISLIKE** for the **TENDERNESS** of this sample.

7. Indicate by placing a mark in the box how you feel about the **LEVEL OF THE TENDERNESS** of this sample.

8. Indicate by placing a mark in the box your evaluation of the **GROUND BEEF-LIKE BITE** of this sample.

9. What did you **LIKE** about the **TEXTURE** of this sample?

_____

_____

10. What did you **DISLIKE** about the **TEXTURE** of this sample?

_____

_____

11. Indicate by placing a mark in the box how you feel about the **LEVEL OF THE JUICINESS** of this sample.

12. Please make any additional comments concerning the eating qualities of this sample that has not been covered in the questions above.

_____

_____

_____

YOU HAVE NOW COMPLETED THE EVALUATION OF THIS SAMPLE. PLEASE PULL THE STAINLESS STEEL DOOR TOWARD YOU BY PULLING ON THE TOP LIP. ANOTHER SAMPLE WILL BE PROVIDED.

VITA

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